

THE
ALPINE JOURNAL:

A RECORD OF MOUNTAIN ADVENTURE

AND

SCIENTIFIC OBSERVATION

BY MEMBERS OF THE ALPINE CLUB.

VOL. XVIII.

FEBRUARY 1896 TO NOVEMBER 1897.

(Nos. 131-138.)

EDITED BY GEORGE YELD.

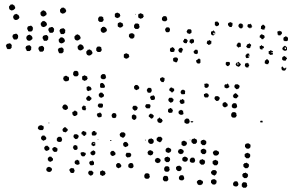
LONGMANS, GREEN, AND CO.

89 PATERNOSTER ROW, LONDON,

NEW YORK AND BOMBAY.

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THE
ALPINE JOURNAL.

FEBRUARY 1896.

(No. 181.)

AN ADDRESS TO THE ALPINE CLUB.

BY DOUGLAS W. FRESHFIELD, PRESIDENT.

(Read at the Winter Meeting, December 16, 1895.)

For such accidents as baffle expectation, and are incapable of being accurately reckoned upon, are quite sufficient to bring us to great and frequent distresses—for instance, downpour of rain and rise of torrents, excessive frosts and snows, wintry and cloudy weather, and other things like these—but if we also neglect to provide for those which can be foreseen, is it not likely that we shall have ourselves to thank for frequent failures?—*Fragment of Polybius* (Shuckburgh's edition).

DURING my term of presidency I have more than once had occasion to acknowledge the obligations I have been under to my predecessors in this chair. Our Presidents, like the famous Priest of Nemi, know that they have but a short time to hold office, and that somewhere in the gloom, perhaps of the northern wolds, their successor is already sharpening his axe for the slaughter. You may slay them. But you cannot prevent their phantoms from haunting the scene of their past activity, and, unlike most of the ghosts known to Mr. Myers, these are really very serviceable apparitions. Indeed, so handsomely have our familiar spirits screened from public view the modesty of the present speaker, that two summers ago, while staying in an Alpine centre, I was called on to decide a bet whether Mr. Clinton Dent, Mr. Horace Walker, or Mr. Charles Edward Mathews was the President of the Alpine Club. The last-named was the favourite, on the ground that he always wrote to the 'Times.' Such ghostly supporters are invaluable, and I gladly take this last opportunity of recording my indebtedness to the departed whom I am so soon to join. I might possibly be even warmer in my acknowledgments, were I not, owing to the

energy of some of my immediate predecessors in setting up the custom of a farewell presidential address, at this moment involved in a task which I feel too heavy for me.

To speak seriously, there are various good reasons why I should have been glad, at the present juncture, to evade the duty of delivering this homily. There can be few things more painful than to have to compose the epitaph—perforce the brief and inadequate epitaph—of a friend whom one had looked forward to meeting again on this occasion. I had never climbed with Mr. Mummery, but I regarded it as one of the greatest compliments ever paid me that he asked me to go to the Himalayas with him. I had been in communication with him for years; he had followed me in many of my spring rambles in the Maritime Alps, Algeria, and elsewhere. I knew something of the man, and, as we all did, I thoroughly liked and trusted him. He was not only fearless and brilliant as a climber; he possessed an original, strong, and keen intelligence. In his talk, as in his book, he carried you on, whether sympathising or disagreeing with his mood and dicta, by a certain vigorous enthusiasm and directness. He was a stimulating companion. His untimely death is a grievous loss to the Club; still more, of course, is it a loss to his colleagues on the Committee. Only twice before, in the cases of Mr. Hudson and Mr. Donkin, have the mountains been responsible for a gap at our table. May it be many years before another such event darkens this annual gathering!

The presence of John Ormsby has long been wanting at our meetings, but it was only the other day that his death was recorded in the newspapers. Almost, though not quite, an original member, Ormsby was one of the chief contributors to 'Peaks, Passes, and Glaciers,' and his name is permanently associated in Alpine literature with the beautiful peak of the Grivola. He was one of the many able men who caused jealous outsiders to describe the Alpine Club as 'the pet of Saturday Reviewers,' at a time when the 'Saturday Review' was the leading weekly periodical. He wrote an excellent book on Algiers. He knew Spain after the intimate fashion in which that country of few but earnest lovers has been known to a handful of literary Englishmen. He gave us a paper in the 'Alpine Journal' on its mountains. Of late years the affliction of deafness cut him off from all social pleasures, and his face can hardly be familiar to any but a few of our older members.

Only last week there passed away at Turin, in the fulness

of years, and surrounded by the affection of the friends he had made in the country of his adoption, one of our Honorary Members. The President of the Italian Alpine Club telegraphed to me last Thursday:—‘Our dear Mr. Budden died last night.’ ‘The Apostle of the Alps’ they called him in Italy. Throughout the peninsula he was known as a generous friend and ready helper in every claim and in any detail connected with the promotion of mountain travel. The burnt village, the distressed guide, the struggling innkeeper—all came to Budden for help. His genial speeches were the standing dish of every Alpine entertainment. Sharing the belief of Quintino Sella in the part out of door pursuits might be made to play in the regeneration of Italy, he did all he could for the cause he had at heart. And he had the satisfaction to feel that his efforts were both successful and appreciated among the generous race whom he had made his second countrymen. I may be allowed to record that the last paper he was engaged on before his death was a statement of the grounds on which my name had been put forward as a proper person to receive the Honorary Membership of the Italian Club.

Two other names, not of members of our Club but of individuals who leave a gap that will be felt in all Alpine circles, must be mentioned. Émile Rey, a guide who stood in the first rank of his profession, has fallen a victim to a moment’s carelessness, an unconsidered step in a place of no apparent danger. We sympathise as when a leader in the hunting field is killed in Rotten Row.

In Madame Seiler, who has not long survived her husband, Zermatt loses one of the few figures that still recalled the ‘good old times’ of the ‘Monte Rosa’ to its former frequenters. We have many of us benefited by her hospitality in days when guests were honoured friends and not ‘numbers.’

I do not intend to furbish up for you a catalogue of the events of the past three years. Catalogues are dry reading at the best, and read aloud easily become intolerable. What has happened is fresh in most of our minds, or if it is fading away we can find it in the past volume of the ‘Alpine Journal.’

You will excuse me if, standing in this handsome Hall, I reverse the usual order and deal first with the events affecting our domestic and social prosperity. In looking back on the—as far as the Club is concerned—not uneventful or unsuccessful record of the past three years, I see much to congratulate ourselves on. This time last year your Committee found itself in a difficulty which had been foreseen, the

treatment of which had, indeed, been postponed as long as possible, but could not be postponed any longer. The problem before it seemed to many of us almost insoluble. We were called on to find for the Club suitable premises, including a Hall fit for its meetings, in a central situation and at a rent we could afford without so raising the subscription as to affect the old, simple, and unique character of the Club. Yet the urgency of the matter was obvious. Our old rooms had become incapable of holding our members at Meetings. The atmosphere was nauseous to all, and, to those who cannot bear tobacco smoke in excess, poisonous. Many old members complained, and some—even old Presidents—were driven away. We had tried hiring another and a strange hall, but this had proved but cold comfort. The remedy was almost worse than the disease. Not even the attractions of Alpine friendships and stewed tea could induce members to linger among surroundings more frigid than a crevasse in January.

The very essence of the Club's vitality was at stake; the friendliness and the homeliness of its gatherings was in danger of being frostbitten. We clung to our Penates; we wanted, not to wander in the wilderness of parochial white-wash, but to set up a new home where we could meet among our own belongings and make more use of them than in the limited space we had completely outgrown.

In this dilemma I suddenly heard that the Society that rented this hall—The Christian Young Men's Association—wished to leave. We entered into negotiations of a very protracted character; but at last our terms were accepted. An amusing incident attended the change of ownership. The Christian Young Men let the rooms for the last week of their tenancy to a theatrical company. On coming to take possession, Mr. Wicks, or his agent, found properties in the committee room and professional ladies in the library. Our predecessors had apparently satisfied their consciences by requiring us in the lease to thoroughly cleanse and purge the premises. We have done so; we have removed not only the stage properties, but also the texts which pervaded the walls, the initials which decorated the lamps, and the three young Christians who lodged in the attics. One of these attics we now reserve for the accommodation of a country president!

Our work, however, has been mainly constructive, and it has been necessarily somewhat extensive and expensive. The Committee have had a clear object in view—to do what was most essential well. We believe we have secured

in this Hall sufficient light both by night and day and adequate warmth and ventilation. We have, further, been at pains to provide walls which may form an effective background, and on which pictures may be hung without destroying the covering. We have arranged a space for exhibiting lantern slides without the intervention of a screen. We hope that the small rooms and another good room upstairs, not yet furnished, may afford facilities for reading, consulting maps, and for meeting one another, which our members never had in the limited space up two stone staircases at Trafalgar Square. Members will now find a good fire and a cup of tea between 4 and 6 in the afternoon.

I see no reason why special times should not be arranged for informal gatherings. To keep the Club together on the old friendly lines, that, I trust, may be one of the main results of our move. This much we might have done in many places. The 'clou,' as the French say, of these premises seems to me this Hall. There are, I think, very few halls—I doubt if there is another hall—in Central London so exactly suited to our needs. A commodious second entrance in Conduit Street will be serviceable—so the Hon. Secretary informs me—to members who desire to evade the police or escape payment of their cabs. It may also be of use for picture and photographic exhibitions. I look forward to a series of such shows, each formed from some special point of view, perhaps, by which the artists among us and the whole Club will be the gainers.

One word more before we leave the rooms. You have, no doubt, noticed the singular architectural merits of the reading room. It is part of an old garden house belonging to and coeval with old Burlington House, and this Hall was also erected some time in the last century either as an auction room or with a view to the entertainments then in vogue. It was known as Cripp's Hall, and Horace Walpole records having been present at theatricals here. So after all the Christian Young Men had a precedent. Since then it has served for many years as an auction hall, a lumber room, and lastly as a meeting house.

We have now restored it and turned it to better purposes. If it looks none the worse for its chequered past, if it is not only thoroughly purged, but handsomely and appropriately garnished, the credit is largely due to my friend Mr. Brydon, an architect who knows as well as any man how to deal with practical matters in an artistic spirit, and who has a special affection for the period to which these buildings belong.

Some critical and financial member may, perhaps, suspect

that I am about to evade what he looks on as the greatest change in my three years—the doubling of the subscription. As that change was made unanimously after full notice, and under conditions which prevent individual hardship to any present member of the Club, I feel under no obligation to defend it again at any length. I mention it mainly in order to repeat what I only suggested, I think, in bringing it forward, that the old subscription has not for years sufficed to allow the Club to live up to its position. In all literary and cartographical matters we have been badly hampered, and it has been impossible (even while living to some extent on charity) to make our publications equal in material respects to those of other Alpine Clubs. I feel sure that my successors will be able to give members of the Club their two guineas' worth, and I feel confident that so comparatively moderate a request will meet with very few refusals when the time comes to fill in our bankers' orders. One very satisfactory result is already obvious. The increase has had no deterrent effect on the flow of candidates.

Next to our change of quarters the most striking domestic incident in my three years of office has been the successful exhibition of pictures and photographs of mountain scenery held over the way in Conduit Street last December. I took advantage of the catalogue to write a prologue to the show. Let me now add a few words by way of epilogue. I preached juxtaposition between painters and mountains on the one hand, and painters and mountaineers on the other. How far did the exhibition justify this argument? Undoubtedly among the purely Alpine pictures exhibited there was a predominance of landscapes of the matter-of-fact kind, snows painted under a noontide glare, mountains drawn without any attempt at composition or selection; views that were some of them little better than well-painted physical diagrams or coloured photographs—portraits rather than pictures. There seemed a too general failure to recognise the dramatic effects of the heights, the capacities of clouds; there was a certain lack of imagination and some want of such delicacy of draftsmanship and appreciation of atmospheric effects as is shown in Walton's 'Peaks in Pen and Pencil,' or in some of M. Loppé's winter sketches. Of course there were many marked exceptions. But near or above the snow level we had, on the whole, more prose than poetry, and the facts given were often only the most obvious facts—there was much left out. There may be, I need hardly say, more than one way of leaving out facts. The topographical painter can be quite as limited in his vision

as the young impressionist who, never having learnt to appreciate and copy with accuracy the structural lines of the mountains, gives us forcible arrangements of blots of colour in place of drawings.

An artist friend of mine, to whom I observed on this character in the Gallery, made a reply which is, I think, worth our consideration. 'What else,' he asked, 'can you expect? You Alpine climbers want pictures for topographical and personal ends, to show the peaks you climb and the cracks and chimneys you climb them by. You call for topographical diagrams, not for romantic landscapes.'

Now, if this were a true and complete statement, my position would be obviously false, in so far that having brought painters to the mountains we should have done so only to crush their efforts by our own blunt and perverse mode of perception. There is some truth in my friend's view, I think. No one but a climber could perhaps care for some of the Alpine pictures exhibited. But it is surely a half-truth! Many climbers, I believe, will be ready to appreciate any true Alpine artist who may in the fulness of time be born to us. If we cannot make an artist, a painter of the High Alps will find his first public in the Alpine Club. Not at once perhaps; we are all slow to see nature through another's eyes, as even Turner and Constable found. And there will always be a few athletes who will prefer to examine conscientiously, and explain exhaustively to the other sex, enlarged photographs of themselves and their conquests. Let me trust there are not many to imitate the visitor heard by Sir W. M. Conway last year to tell a lady that Masherbrum was 'somewhere in the Tyrol,' and, on being pressed as to whether he had climbed it, to reply promptly, 'No; but something close by.'

At any rate, this year we have debarred that visitor from his photographs, and forced him to look at the pictures. This step has been taken as much in the interest of the photographers as in that of the painters. If some artists and owners dislike the mixing of paintings and photographs, the photographers, on their part, demand an amount of space which cannot be given them in a combined exhibition. This year they will have their own show later on. Another year I should suggest the order might be reversed, the photographs shown in winter and the pictures in the brighter and longer days of the London season.

From art to literature is a natural step. The production of the Journal has occupied but a fraction of the energies of our industrious and illustrious colleague, Sir W. M. Con-

way. He has added to our Alpine library two works, one of which was very aptly described by the late Premier as 'even more remarkable and monumental than the Karakoram journey it recorded.' In another book, almost equally monumental, my friend has recorded a walk from end to end of the Alps with two Ghoorkhas. It is an entertaining record of a vigorous journey. 'Brown, Jones, and Robinson' had some famous adventures among frontier fortresses, but they were never, like Conway and his Ghoorkhas, an object of pursuit to the forces of two nations. There is a fashion nowadays for little books by great men. Sir W. M. Conway has made a very proper protest by presenting to the world literary offspring of such aldermanic bulk that the author who would surpass him must produce twins. In my judgment Sir W. M. Conway's Karakoram map is a yet more 'remarkable and monumental' work for a private individual to have executed than even his books, and we owe some thanks to the Council of the Geographical Society for having gone to the considerable expense of reproducing it on a scale adequate to its importance.

Close in alphabetical and literary conjunction with our knight we find, as usual, Mr. Coolidge. He has not yet been made a bishop, but Grindelwald, that haunt of ecclesiastics, expects soon to see him in gaiters of a new cut and with his ice-axe turned into a crosier. With his usual untiring energy he continues to devote himself to accumulating and condensing, in the form of 'Climbers' Guides,' all the information that can help his fellow-members to enjoy the Alps to the full, to wander off to those delightful recesses where Cook's and Perowne's tourists cease from troubling, and the young climber can appreciate the charm of the mountains before they had been discovered by the clients of the circulating agencies, who, like the novels of the circulating libraries, are generally but poor company.

Mr. Coolidge has been, and is still engaged, with almost excessive care and conscientiousness, on the task the Club too lightly, perhaps, undertook—that of renewing the 'Alpine Guide.' The task is in many ways one of the most difficult and delicate that could have been found in Alpine literature, and Mr. Coolidge is one of the very few men among us who can carry it through with any hope of success. I trust it may not too long delay him from prosecuting those historical researches in Alpine regions, in which he has placed himself in the front rank of European scholars.

There has been no want of activity among our members.

I do not, however, find traces in our literature of the increase there ought to be in the annexation of the out-of-the-way districts which still afford secure refuges from the madding crowd. Nor does there seem as yet to be any sign of the growth of that spirit of natural research, that habit of taking up a particular point of view and working it out, which is so common, even too common, abroad. The direction of English education doubtless partly accounts for this lack in our publications, which has perhaps been also accentuated by the somewhat excessive, if not superfluous, disclaimers of any scientific aim put forward by some of the most prominent contributors to our early literature.

One problem, the action and extension, past and present, of glaciers all over the world has been taken in hand by our Committee, with the help of the energy of Captain Marshall Hall. The results obtained will be chronicled from time to time in the 'Journal.'

Mr. Clinton Dent attacked a more practical problem, and one of some importance, in endeavouring to bring about the adoption of a uniform code of signalling between parties in distress on the mountains and the huts or valley stations. An accident on the Matterhorn this summer, in consequence of which a wounded guide was left for hours on the mountain, furnished an opportune answer to his critics. Had his system been in use the man might have been brought into shelter with far less delay.

Outside the Alps there have been two noteworthy expeditions by our members. First in order of time came Mr. Fitzgerald's remarkable and numerous exploits in New Zealand, where, not only did he carry through successfully some daring ascents, but also proved the practical utility of climbing by finding for the colonists the easy and direct pass they have so much wanted and so long sought to the West Coast. His companion Zurbruggen showed how much more rare is the judgment that recognises the right way up a new peak than the energy that forces the wrong one. For possibly, in consequence of the frequent opportunities he had had in his earlier expeditions of reconnoitring the mountain, he eventually found a line of ascent by which he could safely walk up Mount Cook alone! Its highest point had escaped Emil Boss and Mr. Green, and only been attained a few weeks previously, after repeated attempts, by the boldest climbers of the colony.

I trust that, when the mountains are better known and mountaineers are more abundant, travellers who follow Mr. Fitzgerald may not be called on to run the excessive risks he

has described in the account of his explorations lately published in the 'Nineteenth Century.'

Of the expedition to Nanga Parbat it would be premature to speak to-night; doubtless you will in due course hear something more from Mr. Mummery's companions of its character and results.

Next to Conway's, undoubtedly the principal literary product of the past year has been the work by which our late and sincerely deplored colleague took us all by surprise. I refer, of course, to Mr. Mummery's account of his climb. We all knew Mummery was a fine climber, but we had hardly suspected him of a style such as his book showed him to possess.

In that volume there are certain statements in which I cannot agree. I shall deal subsequently with some of these topics, for I knew Mr. Mummery well enough to be certain that he would have been the last man to wish a discussion on subjects material to the welfare of this Club and the future of mountaineering postponed on his account.

Moreover, the consideration that might have rendered such a reference too painful is absent. There is no reason whatever to think that the fatal accident on Nanga Parbat was the result of any rashness on the part of Mr. Mummery, or of any failure to act on the rules and with the precautions that have been in use among earlier explorers in distant lands from 1868 to the present time.

And now, in place of going into further detail, I will ask you to turn aside from the incidents of the day in order to look behind and forward, and to try to form some picture of the development and progress of mountaineering as a craft.

Last year I trod in the footprints of one of your earliest Presidents and your future President. I climbed Piz Bernina, and without guides. On my return I naturally looked with interest to the narrative of Kennedy and Hardy's expedition in 'Peaks, Passes, and Glaciers.' From an historical point of view it seemed to me a very curious and instructive record. It shows what unreal terrors the mountains were capable of inspiring even at a date subsequent to the foundation of this Club. It shows, also, how slow and gradual was the evolution of the craft of climbing among guides, as well as amateurs. Let me illustrate in detail these statements. The description of the rocks of the 'Gemsens-Freiheit' clearly refers to the identical route now followed. Even when the crags are snowy there is nothing to prevent moderate climbers moving in the ordinary way over them at a fair pace, perhaps tightening the rope now and then. Yet thirty-five years ago

a President of the Alpine Club thought it a feat for a guide to climb these rocks and to be able to haul his 'Herrschaft' up separately after him. Again, the rock ridge between the highest snow of Piz Bernina and the stone-man seems very short and simple to modern eyes. The early mountaineer thought Jenni venturesome for crossing it while roped to a stationary party, and describes the guide as slipping in the transit. Again, on this famous expedition elementary rules of the craft were disregarded. A single guide ascended alone a really steep snowslope, while a traveller climbed it separately roped to another guide. Two of the party returned roped together over snows concealing large crevasses.

These facts are significant. I could add others from my own early experiences a few years later. I have seen three narrow escapes in one day, all arising from the neglect of a guide to use the rope where it was called for. The deduction is surely obvious. The art of climbing snowy mountains was not an inheritance from remote generations of Alpine peasants, but a new thing, in which the experience, or instinct, as some call it, of the peasant was only an ingredient. Guides and amateurs—Balmat and De Saussure—were both learners, but the guides had the start. They were for long the better men by virtue of the aptitude acquired from childhood, and the physical force coming of a life of labour. Their aim, and that of the amateur, were identical, to do as much as possible with as little risk as possible. The great novelty introduced by amateurs, climbers for pleasure, was the recognition of the solidarity of 'the party.' That it had its risks and drawbacks was obvious, but it was felt that its advantages turned the scale. It was felt, further, that the weaker brother, once accepted as a companion, must be accepted for better or worse, that he could no more be left to shift for himself than a comrade in the face of the enemy. And, on the whole, despite the terrible Matterhorn accident, the safety gained by the proper use of the rope was found in experience to more than counterbalance its inconveniences.

For many years the development of mountaineering, of its implements and its methods, went on, and always with the same view, that it was a pursuit in which danger was inevitable, but that by skill and care the dangers could be largely eliminated and reduced. The attitude of the climber was 'Attention!' As soon as he passed the snow-level he felt in the enemy's country, and was on his guard against surprises. The first lesson he was taught was that difficulty and danger were by no means necessarily connected, that

the most perilous moments were those when no peril was obvious. He found sufficient excitement in the novelties of the snow-world, the passage of the *bergschrund*, or the cornice, or the protracted struggle in the ice-fall. To a younger generation eager for novelty these things seemed to grow flat. Ice-craft, having been perfected, was neglected while men set to work to develop rock-climbing with extraordinary hardihood and success. The gymnastic side of climbing was developed, perhaps with some loss on other sides. Attention was paid to the infinitely little. Variations became vexations.

Then in some independent minds a bold counsel of perfection was broached—to climb without guides. The first Englishman to put it in practice succeeded only in proving that for some people, including himself, the experiment was too rash. The conservatives among us chuckled prematurely over the indiscretions Mr. Girdlestone revealed to the world. For meantime another party, Mr. Charles Pilkington, Mr. Lawrence Pilkington, and Mr. Gardiner, were steadily setting themselves to be as capable as guides. The attempt, in my opinion, was perfectly legitimate, it has proved successful, and it has led to a great advance in mountaineering. It may be granted that in the very front rank of mountaineers there will always be two guides to every amateur. So much may be allowed for the inherited touch, the muscular force, the perfect patience of the born mountaineer. But I do not see my way to allow much more. I am conscious that this is indeed a change from the time—before 1885—when to whisper that an amateur might become nearly as good as a guide was held to be the mark of a vain boaster or an ignorant person. But, judging from recent experience, there are now members of this Club with whom I would rather go up a mountain than with any guide out of the first rank. In the present relations of guide and amateur it is not without amusement that mountaineers have seen within the last few days that typical representative of British middle-class intelligence, the 'Daily Telegraph,' calling on Sir Alfred Wills to see that no traveller be allowed to climb a mountain without a certificate from a guide that he is physically capable. If he interfere at all, Sir Alfred Wills will, I trust, secure that none but members of this Club shall be allowed above the snow-line!

Far be it from me to offer any encouragement in guideless climbing to raw climbers or to the public at large. It is in my opinion a luxury to be earned by a long and well-spent apprenticeship. No amount of athletic ability without mountain experience qualifies a beginner for it; athleticism may even

be a disqualification! No one, perhaps, is in such danger as the gymnast who fancies he can perform the feats of the training school under the varying conditions of the mountains. The high rate of mortality among German mountaineers is, I fancy, in part due to their national craze for gymnastics, though it is still more due to the madness of solitary climbing. Travellers without guides have at present this advantage, that all are on their mettle. I fear there may be occasionally a certain amount of false security in the companionship of guides. With the Alpine peasant familiarity with the expeditions he frequently repeats—and the 'central' guide is forced into frequent repetitions—has bred, in some cases, contempt; he grows careless himself and in looking after his party. The accidents caused directly or indirectly by guides have not been, and never can be, catalogued; but they have occurred—I can speak from personal experience of one or two, happily not fatal—and are, I believe, likely to recur. How many chamois-hunters and hay-cutters are annually the victims of a moment's disregard of familiar risk? And these men are the raw material of guides. Yet, if the average guide is not infallible, he is still likely in a large majority of cases to be a better man than his employer. Few travellers ought to venture to do without guides, but all travellers can try to make themselves competent to exercise at times control, to check any remissness in the management of an expedition, particularly in the use of the rope, to insist on a resolute decision when weather or unlooked for difficulties make a change of plans essential, to take their fair share in the day's work and the day's responsibilities—in short, to act as part of the crew and not as mere passengers or parcels.

In this retrospective review I have now reached the date (only yesterday, as it were) when our craft having been developed its rules were laid down in various handbooks and treatises.

Now, to some minds, eager, inventive, paradoxical, the fact of the formulation of a code of rules is an incitement to criticism and revolt. Mountaineering without Guides had been successfully mastered; the next stage of progress sought was to mountaineer without precautions. It was really a retrograde step. The principle hitherto had been to give the mountains no spare chances in the game. Now, rules sometimes found irksome were voted superfluous. The abuse of the rope by men who are no climbers at all led to its contemptuous disuse by men of exceptional force. On two particular matters raised in Mr. Mummery's final chapter I

feel bound to qualify his statements. Mr. Mummery writes 'that it would appear obvious that it is an error to assume that on steep slopes or cliffs three men are safer than two.' The following page, in which he endeavours to prove by illustration this thesis, is strangely unconvincing, to use no stronger expression. To my mind it only shows that the writer, brilliant climber as he was, probably because he was so brilliant, had failed altogether to understand the co-operative force of 'a party.' Two men can, and ought, in places of peril, to be able to combine their powers of resistance while the third moves, and they have larger opportunities of doing so. *Two* is not a proper number as a rule for difficult expeditions. As a rule, I say, for on certain rock peaks I agree it may be admissible, and on certain exceptionally dangerous expeditions two may be the less dangerous number, the lesser evil. On snowfields it is possible the adjustment of a double rope recommended by Mr. Mummery may diminish the risk. But for ordinary men or average ascents less than three is not a proper number. I do not speak without some personal experience. I have climbed myself with one guide or friend; I once very nearly fell a victim to doing so. As it chanced I just succeeded in holding up my companion. Had we been three, two to join in resistance, there would have been far less risk. The third man gives the party as a whole not only a double power of resistance wherever a bad place has to be climbed or crossed, but also a wider range of holding ground.

Solitary walking on the Alps is, I admit, an extraordinary temptation to any man of imagination, and the word *walking* may, in the case of one familiar with the mountains, cover much. But the old mountaineer abuses his privilege—I have had a personal lesson in this respect also—when he goes alone or unroped on snow. It cannot be said too emphatically that Mr. Mummery's belief that old climbers need never fall into crevasses is opposed to general experience and to innumerable recorded facts. On my first journey to the Caucasus we all fell into crevasses. Happily we were always roped. I have seen old François and his pipe frequently in a crevasse, and the pipe has perished. I have gone in myself when following in the exact footmarks of far heavier men. The matter does not admit of question: the evidence is overwhelming that no practice, not even the eye of a chamois, will always save a man from falling into a concealed crevasse.

Another source of danger, I believe, at the present time is carelessness. No one has emphasised this more strongly than Mummery. 'The first lesson,' he writes, 'the novice has

to learn is to be ever on his guard, and it is one that the oldest climber hardly masters.' It is, he adds, 'the ridiculously easy rocks that swell the list of Alpine victims.' These sentences furnish a singular commentary to the subsequent statement that his pages are written for parties 'of which every member is absolutely certain never to slip.' The admission is significant. In point of fact, our friend was amusing himself by writing not for human beings but for that ideal climber, equally strong on rock and ice, never off his guard, who never was or will be, but to whom Mummery himself and Emile Rey were in many respects two of the nearest approximations that have yet been seen in the Alps.

It is among guides that carelessness is now chiefly prevalent. We have had two striking instances in a short space of time. Émile Rey himself falls after he has unroped; two of his comrades glissade with their employer into a crevasse on Mont Blanc. Last year a well-known Dolomite guide escaped by a hairbreadth Rey's fate under exactly similar circumstances. Beware of blind faith in guides—they are not infallible. As I have said already, we know not how many accidents have been due primarily to guides. I do know of narrow escapes due—not the escapes, but the risks—entirely to their carelessness or even perverseness in face of warning. An Engadiner, no longer living, many years ago took all my party into a *bergschrund*. Competent climbers without guides have this advantage at any rate, that they know their companions' capacities.

At the risk of being tedious, one more warning for that distant exploration which now forms so large a part of the Club's work. Let me implore you to remember the absolute necessity of being on your guard lest your Alpine experience become a snare to you. Under hotter suns, in moister climates, you will find the conditions of snow and ice, and even rock, very different and often far more dangerous, the variations in those conditions far more rapid, the mountains as a whole less stable. You must constantly adapt and readjust your action and course in view of local facts. You must not try to rush your peaks. Reconnoitre, reconnoitre, reconnoitre! Be discreet, considering that discretion is the better part of valour, and that the valour that is without it is not the truest kind.

A new rule or principle may be called for. My own experience inclines me to think—and there is an *obiter dictum* of A. W. Moore's recorded somewhere to the same effect—that among new mountains no pass should be tried of which the

nature of the further side has not been previously ascertained—and carefully ascertained.

I have felt it my duty to testify to the faith as I hold it after a tolerably long and varied experience. The tradition of this Club has been to promulgate the principles and rules by which men may climb with a minimum of peril. We do not attempt to eliminate danger; we encourage new explorations despite their inevitable perils. But our object has been that our members may attain the maximum of success and enjoyment with the minimum of danger. We believe that a comparison of the Alpine death-roll of our own Club with that of the climbers of all nations outside it will show that we have to a great extent succeeded in this effort. To incur a maximum of needless peril for a minimum of results—that is the practical outcome of the tendency of the day among the common herd of climbers. If anyone thinks I speak too strongly let him read the analysis of this year's accidents in the Alps in our Journal and in foreign publications.

Weary of sermon-writing, I took down a classic I had not looked at for forty years, and there, opening on the story of the Fall of the Diablerets, I found—as by a *sors Virgiliana*—the conclusion of the whole matter. The book was 'Sandford and Merton.' I read as follows:—

“Dear heart,” said Tommy, when Mr. Barlow had finished his narrative, “what a number of accidents people are subject to in this world!”

“It is very true,” answered Mr. Barlow, “but as that is the case it is necessary to improve ourselves in every possible manner, so that we may be able to struggle against them.”

I am afraid you must have found me very much of a Mr. Barlow in this chair!

And now nothing is left me but, in bidding you farewell, to thank both my colleagues of the committee and the Club in general for the very great kindness and forbearance they have shown towards me on all occasions during my three years of office, and to wish the Club all prosperity in this new departure. If I believe in the Club's permanence and prosperity it is because it seems to me to be founded on two of the most primitive and deep-rooted instincts in mankind. It is connected, if modern philosophers will allow the distinction, both with the physical and the moral sides of human nature. Who can see street children at play without recognising that to climb, whether a heap of stones or 'the highest parts of the dust of the world,' and then tumble down

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NORTHERN FACE OF NANGA PARBAT OR DIAMIR, Digitized by Google

the other side, is one of the earliest and purest forms of human pleasure? Who, again, has ventured far or often into the solitudes of the eternal hills without feeling once and again that imperfect perception of things not seen which is perhaps one of the nearest approaches to direct revelation allowed to a generation in which most of us.

‘ See all sights from pole to pole,
And glance and nod and bustle by,
And never once possess our soul
Before we die ’ ?

On the heights, if anywhere, we do possess our souls! The great mountains are more than playgrounds; they are the cathedrals of nature: under their walls we may lay down for a time most of the burdens of life, and even find some support or solace in its sorrows.

CLIMBING ON THE NANGA PARBAT RANGE, KASHMIR.

By J. NORMAN COLLIE.

(Read before the Alpine Club, February 4, 1896.)

AMONGST mountaineers who has not at some time or another looked at the map of India and wished for an opportunity to visit that mighty mountain range the Himalayas? Many are the books that tell us of the wonderful snow and ice worlds that lie hidden there. Nearly fifty years ago Sir J. Hooker (then Dr. Hooker) wandered through the eastern end of the Himalayan range. In his ‘Journals’ he gives us a most fascinating account of Sikkim and the mountainous country round Darjeeling, where Kanchanjanga is only second to the giant Devadhunga. Whilst Knight, in his book ‘Where Three Empires Meet,’ deals with the north-west corner of India, where the valleys of the Hindoo Koosh slope southward towards the great Indus; and only recently we have heard from Sir W. M. Conway about the inhospitable wilds of the Karakoram, and of glaciers larger than any outside the Arctic regions which lie hidden amongst stupendous peaks whose summits reach an altitude of 28,000 ft.

But still it is a far cry to the Himalayas, and although one may wish often and long that it may be one’s luck to start on some particularly propitious day for India, armed with mountaineering boots, an ice axe, and Alpine rope, nevertheless the propitious day never dawns, and circumstances over

which one has no control usually decide that a much less ambitious journey is all that the Fates will allow.

A visit to India had for many years been with me one of those possibilities which may be as a rule classed as 'most improbable.' If a year ago I had been asked, 'Do you think you could go for a climbing trip to the Himalayas?' I should certainly have had to own that it was most unlikely that I could ever find either the time or the money for such an expedition. But it is the unexpected that always happens, and now the dream is accomplished.

I have seen the great mountains of the Hindoo Koosh, and the Karakoram ranges from Tirach Mir over Chitral, to K² at the head of the Baltoro glacier; I have wandered in that waste land, the marvellous gorge of the Indus. I have stopped at Chilas, one of the outposts of civilisation in the wild Shinaki country, where only a few years ago no white man could venture. I have passed through the defile at Lechre, where, in 1841, a landslip from the northern buttress of Nanga Parbat dammed back the whole Indus for six months, until finally the pent-up masses of water, breaking suddenly through the thousands of feet of debris, burst with irresistible force down through that unknown mountain land lying below Chilas for many hundreds of miles, till at last the whirling flood, no longer hemmed in by the hills, swept out on to the open plains near Attock, and in one night annihilation was the fate of a whole Sikh army. Also I have seen the northern side of the mighty Nanga Parbat, the greatest mountain face in the world, rising without break from the scorching sands of the Bunjé plain first to the cool pine woods and fertile valleys 5,000 ft. above, next to the glaciers, and further back and higher to the ice-clad, avalanche-swept precipices which ring round the topmost snows of Nanga Parbat itself, whose summit towers 26,620 ft. above sea-level and 23,000 ft. above the Indus at its base; whilst further to the northward Rakipushi and Haramosh, both 25,000 ft. high, seem only to be the outlying sentinels of grander and loftier ranges beyond.

Towards the end of 1894 the late Mr. A. F. Mummery and Mr. G. Hastings arranged that, if they could obtain permission from the Indian Government to visit that part of Kashmir in which Nanga Parbat lies, they would start from England in June 1895, and attempt the ascent; later I was able to join the expedition. We left England on June 20, reached Brindisi on June 23. There we embarked on the P. and O. steamer 'Caledonia.' Although we had heard that the Red Sea in June would probably be extremely hot the temperature did

not exceed 90°, and it was not until after our arrival in India that the thermometer marked a maximum of 103° in the railway carriages between Umballa and Rawul Pindi. After leaving Aden we experienced the full blast of the monsoon, but as we were running with the wind we did not feel the gale severely, and arrived at Bombay on July 5 the better for our sea voyage. On July 7 we reached Rawul Pindi, and saw for the first time the foothills of the Himalayas, rising out of the Panjab plains. That evening we slept in a dāk bungalow just short of Murree, having been overtaken by the first burst of the rains on the hills. From Rawul Pindi to Baramúlá, in the vale of Kashmir, there is an excellent road, along which one is able to travel in a tonga. These strongly built two-wheel conveyances usually complete the journey of about 170 miles in two to three days. Beyond Baramúlá it is necessary to take a flat-bottomed boat or punt, called a 'dúnga.' For some distance the route lies up the Jhelum river, but soon we emerged on to the Woolar lake, and in the grey morning light the hills which completely encircle the vale of Kashmir could be seen. The lake was perfectly calm and reflected on its surface the nearer hills. Soon, however, we came to miles of floating water lilies in bloom, whilst on the banks quaint mud houses and farms, encircled with poplar, walnut, and chenar trees, were visible, and beyond great distances of grass land and orchards stretched back to the feet of the mountains. But we were not yet across the lake. From the westward a rain cloud was approaching, and soon the whole face of nature was changed. Small waves arose; then a blast of wind swept down part of the matting which served as an awning to our boat, and in a moment we were in danger of being swamped by the waves. Several other boats which were near at once came towards us and were lashed to ours by ropes; meanwhile the women and children in them were screaming, crying, and throwing rice on to the troubled waters, presumably to propitiate the evil beings who were responsible for the state of affairs, and seemingly with marvellous effect, for no sooner had the cloud passed than the wind dropped, and without further adventure we made land at Bandipur, on the northern shores of the lake. Here we found ponies, which had been obtained for us by the Hon. C. G. Bruce, of the 5th Gurkhas, he having travelled all the way from the Khagan valley to Kashmir in order to engage for us servants, ponies, &c. As none of us had ever seen him, and he spent about a fortnight out of a month's leave in arranging these matters for us (strangers to him), I take this opportunity of thanking

him, and also saying that during the whole of our expedition the military and political officers and others whom we met invariably helped us most kindly in every way. On July 11 we loaded the ponies with our baggage and started for Nanga Parbat. Our route lay over the Tragbal or Raj Diangan pass. On the further side we descended to Kanjalwan, in the valley of the Kishnganga river. Up this valley the road leads for about twelve miles to Gurais; it then turns to the left and follows the Burzil stream. From this valley two passes exist to the north which lead to the Nanga Parbat range—the first the Kamri; the second the Dorikoon, or Burzil, over which the military road to Gilgit has been made. Both these passes are between 13,000 and 14,000 ft. high, and both lead to Astor. We chose the former, for we were told that good forage for our ponies could be obtained on the further side. On the morning of July 14 we crossed the pass, finding still some of the winter snows unmelted on the top. Here we saw Nanga Parbat for the first time, rising over forty miles away in dazzling white far above all the intervening ranges. Two days later at Rattu we found Lieut. Stewart, R.A., encamped with his mountain battery. He showed us the two guns which he had taken through the snows over the Shandur Pass, when accompanying Colonel Kelly from Gilgit to the relief of Chitral. They weighed over 2 cwt. each, and had been carried over the pass on men's backs. The next day, July 16, saw us at the base of Nanga Parbat, where our camp was pitched about three miles above the village of Tushing, in the Rupal nullah, in the midst of a picturesque grove of willows. We had taken twenty-seven days from London, travelling continuously, but the weather was perfect. We were on the threshold of the unknown, and the untrodden nullahs round the Nanga Parbat awaited us.

The next day we rested, discussing plans and improving our camp. I took the height of the barometer (531 millimetres), from which observation our camp was 9,900 ft. above sea level.*

* All the heights given in this paper, other than those taken from the map, are deduced from observations made with a novel and portable form of mercury barometer, which can be coiled up and carried in a small tin box in the pocket. As I was unable to make comparative readings with a second instrument at a known height, the barometrical readings are in every case calculated from the pressure at sea level being assumed to be 30 in. This makes the height as a rule about 800 ft. lower than if 31 in. were taken as the normal sea-level pressure.

We finally decided that it would be best to obtain a good view of the south side of Nanga Parbat before we made up our minds whether we should remain in the Rupal nullah. So the next day Mummery and I started with a vague intention of combining pleasure with business; in fact, we had intentions on a peak marked 20,490 ft. on the map (Astor and Gilgit with the surrounding country corrected up to 1883). This map is most accurate. All the valleys are marked correctly; a few glaciers, however, have been omitted. This is probably due to the fact that they could not have been seen from below by the compilers of the map.

We camped, at 12,150 ft., on the south side of the snout of the big Rupal glacier, which comes down from the Mazeno and Thosho passes. Next morning, July 19, we took with us two of our Kashmiri servants, both of whom had the reputation of being first-rate shikarris and most fearless climbers. For some distance our route lay up the glacier, but we were in bad condition, and very soon came to the conclusion that a smaller summit would be just as useful to look at Nanga Parbat from as the 20,490-ft. mountain. We therefore turned our attention to a spur on our right, which ran in a northerly direction from the 20,490-ft. peak. As the day wore on even this proved too much, for, after considerable floundering through much soft snow, we both gave in at a height of 16,000 ft., and, yielding to an enticing rock arête, began the descent. The climbing on this rock ridge was made most interesting, chiefly owing to the peculiar positions that the fearless shikarris occasionally thought it necessary to assume. In many places it was only by very great persuasion that they were induced to proceed, as they assured us with many signs, and Hindustani words which we understood but imperfectly, that no self-respecting Kashmiri ever would attempt to climb down such places, that even the ibex and markhor could not do it.

During the day we had many views of the southern face of Nanga Parbat, but nowhere could we see any route that looked at all promising. Everywhere one precipice rose above another, whilst hanging glaciers were placed in all the most inconvenient places. There was, however, one way we thought might lead us to a break in the ridge, west of the summit, but even had we been able to reach this break—which was very doubtful—the remainder of the climb, along a rocky arête, with an ascent of at least 6,000 ft., looked still more formidable. Some idea of the average angle of this south face may be obtained from the map. The

height of the glacier directly under the summit is about 11,000–12,000 ft.—that is to say, in about two miles or less measured on the map there is a difference in height of 15,000 ft.

We reached our camp again late in the afternoon, finding that Hastings had come up from the lower camp. A council of war was then held. Evidently we were not in a fit condition to storm lofty peaks. In order, therefore, to get ourselves into proper training a walk round to the other side of the range was considered to be what we wanted. Hastings, as arranged, had brought up plenty of provisions with him, thus enabling the party to brave the snows and uninhabited wilds which we intended to explore. So next morning we started in the dark for the Mazeno La. Here we had our first experience of the kind of walking that was in store for us: everywhere loose stones. The sides of the glaciers, the mountain-sides, even the glaciers themselves were buried deep with these exasperating nuisances. Hour after hour span out its weary length, yet the further we went the more rocks, stones, and debris seemed to lie in wait for us. The height of the Mazeno is about 18,000 ft. Here I experienced all the delights of a severe attack of mountain sickness, and the last 500 ft. almost proved too much for me. Only with the greatest difficulty was I able to stagger up on to the summit of the pass. The western face is much more precipitous than the one which we had ascended, but by making use of an easy rock arête we soon got down to more reasonable altitudes. We were not destined, however, to arrive at any comfortable camp, for we were still on the glacier when it turned dark, and the best we were able to do was to sleep on a small plot of grass at the edge of the side moraine. At daybreak we started down the valley, arriving early at a shepherds' encampment. Here we obtained sour and particularly dirty goats' milk; also a sheep, price 4 rupees. We were now in the wild Chilas country, but the natives seemed to be friendly enough, and throughout our expeditions we never experienced the least difficulty with them. Our destination being the Diamirai nullah we pushed on. Apparently two small ridges separated us from it. They were small only in comparison with their bigger neighbours; consequently we did not reach our goal that evening. On July 22, at midday, we camped in the Diamirai nullah, on the southern side of the glacier; the height of the camp was 12,450 ft. The view towards the westward was magnificent. Far below us the valley dropped rapidly down to the Indus,

nearly 10,000 ft. below. Beyond range after range receded back to the horizon, the furthest peaks being probably more than a hundred miles distant. The country we were looking into beyond Chilas is practically unknown. There the mountain thieves of Darel and Tangir live unmolested; no white man has as yet penetrated into their land. But eastwards, at the head of the valley, towered Nanga Parbat, 14,000 ft. above us. Up its precipitous sides a path had to be found. From our camp we could see the whole face, and Mummery was not long before he pointed out a route by which we hoped later to gain the upper snowfields, and from thence the topmost pinnacle, which glistened white in the sunlight far above against a steel blue sky.

On the morrow the provisions began to run short; it therefore became necessary that we should retrace our steps to the Rupal nullah. The servants and coolies were sent back by the valleys, whilst we made up our minds to cross the ridge on the south of the valley, and sufficiently high up to bring us down either on to the Mazeno La or, if we were fortunate, into the head of the Rupal nullah. That night, a little before 12 P.M., we started with lanterns, and slowly climbed up a rock arête which led to our pass. We did not seem to waste much time, but the Himalayas are constructed on a totally different scale from either the Alps or the Scotch mountains, and although no unnecessary halts were made we only reached the top of our pass at about 2 P.M. The summit by the barometer was 18,050 ft. Before reaching the top we had some splendid climbing on a ridge of rocks which were nearly perpendicular, whilst later on a most sensational path had to be cut across an excessively steep face of ice about 250 yards wide. Mummery assured us that he had never been over a more 'sporting' pass, and we were much delighted with the splendid rocks and varied climbing which we had experienced. Our enthusiasm was soon to be checked; below, on the further side, neither lay the wished for Rupal nullah nor was the Mazeno La even in sight; but the glacier which lies to the west of the Mazeno Pass spread out its interminable length at our feet. Without waiting even for a hurried lunch, which was impossible, for the simple reason that we only had about half a dozen biscuits and two or three sticks of chocolate amongst the whole party, we rapidly descended down easy slopes to the glacier. Four miles away on our left lay the Mazeno La, thousands of feet above us, and all our hopes of dinners and sleeping-bags vanished. We had been out

18 hrs., and it was not improbable that it would be another 24 hrs. of continuous walking before we could hope to reach the Rupal camp. We had climbed over one pass about 18,000 ft. high; another of the same height lay before us, and last, but not least, we had nothing to eat. Fortunately I had plenty of tobacco and a pipe; never shall I forget how splendidly they helped me over all the stones and pitfalls of that night's march. When at the summit of the Mazeno La, in the dark, at 10.30 P.M., Hastings and Mummery rested awhile that pipe ministered to my vacuous interior. During our wild nocturnal wanderings down and down through the intricacies of the glacier leading from the Mazeno to the Rupal glacier it solaced my weary footsteps. What cared I whether Hastings growled—for he, poor fellow, does not smoke—or whether Mummery, as he stumbled frantically over the wilderness of stones, groaned aloud at the disgraceful condition of the glacier? I was comforted.

But daylight came at last, and with it vague hopes that perhaps, after all, we might find breakfast waiting for us a few miles down the glacier. We had told one of our Kashmiri servants to wait for us there—for a week, if necessary—till we turned up. We were quite uncertain whether he would follow out our instructions; but at 7 A.M., Hastings and I found him camped under a huge rock. At once provisions and a kettleful of hot tea were sent back to Mummery, who was resting some miles up the valley, whilst we proceeded to eat everything we could lay our hands on. At 10.30 I left Hastings and Mummery asleep under the shadow of the rock, and set off alone for the lower camp, where I arrived at 5 P.M. They, being wiser, rode in two hours later on a couple of mountain ponies which had been sent up the valley to meet them.

We found the Hon. C. G. Bruce had arrived, bringing with him a couple of Gurkhas. Over our dinner we all forgot the weary tramping of the previous 24 hours, and were revived and comforted by many bottles of Bass—a priceless treasure in those parts. Also when at a late hour we turned into our sleeping-bags before the roaring camp fire, whilst overhead the glistening stars blazed in a cloudless sky, it was agreed to, without any doubt whatever, that climbing in the Himalayas was worth coming all the way from England to experience, and that those who lived at home at ease were hugely to be pitied. Never would they enjoy the keen mountain air of Nanga Parbat; never would they wander homeless and

supperless over the vile wastes which surround the Mazeno La from 11 o'clock one night till 7 P.M. on the day but one following. But our happiness was not quite complete; we sadly missed Cecil Slingsby, our friend and former companion in many an expedition. Not only on that night but on many subsequent occasions we would often sigh; then the exclamation which followed was always the same—'By Jove, how Slingsby *would* enjoy himself if he were here!'

But I must pass rapidly over some of our subsequent expeditions. On July 21 Bruce and I went up the Tushing glacier with the two Gurkhas, Ragobir and Gaman Singh. On July 27, Hastings preferring to remain in camp, Bruce, Mummery, and I started for a ridge which runs S.E. towards Tushing from the peak marked 22,360 ft. We crossed the Tushing glacier and camped at 15,000 ft. Next day we spent in an unsuccessful ridge-wander. Our intention was to climb a rock-peak overlooking the Chongra nullah; but we were all lazy, and stopped at a point somewhat short of the peak in question, in order to smoke the pipe of peace and enjoy the superb view of the Karakoram ranges. Far away to the N.E. rose one peak out of the masses of white mountains; it was considerably higher than its neighbour, and I have little doubt that it was K². Haramosh rose superbly into the blue sky, its lower slopes being draped here and there with clouds. But the one mountain which was really magnificent was the double-headed Dichil Peak.* It rises in a series of perfectly impossible precipices from the Dichil nullah, and is marked 19,490 on the map. I am positive its height has been greatly underestimated. I have seen it from a height of 16,000 ft. whilst returning from the Rakiot nullah to Dashkin. It then apparently towered at least 5,000 ft. above me. Its base in the Dichil nullah cannot be more than 10,000-12,000 ft. If the lower two-thirds of it were not hidden behind an intervening range the view of it as one descends from Astor to Doian would probably far surpass that of Ushba in grandeur.

We returned to our camp by a different route. A sporting rock ridge led down to the upper Tushing glacier. On it we had some delightful scrambling, ultimately reaching the upper pasturages lying on the left bank of the glacier, and it

* There is a picture of this peak on p. 119 of Sir W. M. Conway's *Climbing in the Himalayas*.

was after dark before we tramped into our camp in the grove of willows.

The 29th was spent in camp, preparing for our start for the Diamirai nullah. On the 30th we started with a perfect caravan of coolies. Our intention was to send our servants, together with the coolies, over the Mazeno La by the route we had originally taken, whilst Bruce, Mummery, Hastings, one of the Gurkhas (Ragobir), and myself should attempt to cross directly from the head of the Rupal to the head of the



**WEST FACE OF NANGA PARBAT OR DIAMIR, 26,629 FEET,
FROM THE DIAMIRAI NULLAH.**

Diamirai nullah. This meant we should have to climb to at least 20,000 ft., probably more, for the route lay directly over the spur which leads westward from Nanga Parbat. That night we camped about 4-5 miles short of the Mazeno La. The height of the camp was about 13,000 ft. We started early next morning in the dark; all day we climbed upwards, but five o'clock found us still 1,000 ft. or more below the summit of the pass. From a barometrical reading we were at 20,150 ft., on a rocky ridge leading to a peak. At this

point Bruce and I came to the conclusion that we should prefer a night out at a less exalted position ; so, taking Ragobir with us, we proceeded to descend. We selected a new route which would take us to the foot of the Mazeno La, but we did not make much progress ; as the sun was setting we were still on a sharp rock arête. Roughly we were about 1,000 ft. higher than the top of the Mazeno La and about two miles to the eastward of it. Here we had to stop for the night, the rocks being too difficult to be attempted by candle light. I could say a great deal about the magnificent sunset effects we watched as we all three tried to huddle together into a small niche in the arête, and a description of the woes Bruce and I suffered during the night, not to mention Ragobir, although it would fall far short of the reality, would, I am sure, be most harrowing, but I will forbear. Let any one who may be curious on the subject of a night out at 19,000 ft. try it ; but let him not forget to place himself in such a position that, twist and turn as he may, he feels the cold jagged rocks poking themselves into him in all directions ; also, though he shelter himself never so wisely, the cool breezes should be able to play at hide and seek beneath his clothing. Late in the night we heard noises above us on the ridge. It was Mummery and Hastings returning. They had climbed some considerable distance further after we had left them ; but the clouds did not lift at sunset ; the other side of the range was unknown ; so after this last heroic effort they were forced to return, having reached an altitude of 21,000 ft. Although they were within speaking distance of Bruce and myself for about an hour, and I had lit a lantern to show them where we were, they could not reach us, and finally selected the most comfortable or least uncomfortable place they could, till the morning light would allow the party once more to be united. As soon as we could, next morning, we descended to the upper snowfields of the Rupal glacier. As usual we were without food ; our camp and provisions were on the other side of the range. We had no alternative : over the Mazeno La we had to trudge. As the sun was setting that day five weary people straggled down from the end of the glacier to the west of the Mazeno to the shepherds' huts below. Bruce, without loss of time, 'persuaded' the herdsman that a sheep and about five or six gallons of sour goats' milk were what we wanted ; and most providentially a sick coolie was unearthed, belonging to our caravan, who had been left behind. It was not, however, the coolie himself we were so glad to find, but his load of 40 lbs. of flour. What more

did we want? In about half an hour fragments of sheep were being toasted on long sticks, whilst Ragobir ministered to our empty stomachs with hot chappatties; the several gallons of sour (and somewhat dirty) goats' milk disappeared with marvellous rapidity, and after we had dined we lay round the roaring camp fire perfectly content with everything in this world.

Next morning only very small portions of that sheep were to be found, but we were certain of a good dinner in the Diamirai nullah. We preferred to strike out a new route and make for a pass situated at the head of the glacier which lay between us and the Diamirai nullah. The height of this pass is about 17,000 ft. From it we saw in the afternoon light, far away to the westward, a vast snow peak, flat-topped, rising several thousands of feet above the surrounding mountains. It was probably Tirach Mir, above Chitral. Directly below the summit of our pass lay our camp, and it was not long before we reached it.

During August 3 and 4 we stopped in camp, and on the 5th Bruce left us, going back to Abbottabad *via* the Mazeno La, the Kamri, and Kashmir. The same day Mummery and I started for the head of the Diamirai nullah to prospect. Hastings, owing to a bad chill, remained in camp. During the afternoon several showers fell. Finally we camped at the head of the glacier on the north side.

Mummery and Ragobir started very early in the morning for the western face of Nanga Parbat. During the day they managed to reach the top of the second rib of rocks lying directly under the summit—height about 17,000–18,000 ft.

I climbed about 4,000 ft. up a rocky ridge which runs down in a southerly direction from the peak marked 21,650, taking with me Gaman Singh and one Kashmir shikarri. Unfortunately the day was cloudy, and I was unable to find out what the valley was like which lay between Nanga Parbat and the 21,650 ft. peak; also what chances we should have should we try the ascent from that point. However on returning in the afternoon I met Mummery on the glacier. He was delighted with his route. It was, he said, magnificent climbing, and he had found a good place for a tent on the top of the second rib of rocks.

The next day, August 7, there was heavy rain. This was the first bad weather we had experienced. From July 13, the day we left the Kishnganga valley, it had been gloriously fine. Our plans now were to push supplies up the route at the head of the Diamirai nullah. Mummery was confident

that once on the upper snowfields, with two days' provisions and a light silk tent, the peak would be ours. Accordingly Mummery, Ragobir, a Chilasi shikarri (named Lor Khan), and myself spent August 8 and 9 in carrying a waterproof bag of provisions up the second rib of rocks to a height of 17,150 ft. Here we left it in a safe place on the rocks. We also had considerable quantities of fuel taken up by coolies to a camp (15,000 ft.) at the bottom of the rocks under Nanga Parbat. We returned that night to our lower camp wet through, the weather having been distinctly bad.

We therefore decided that, as we should not be able to make any serious attack on Nanga Parbat for at least a week, Hastings should go back to Tushing, and thence to Astor, bringing back with him sheep (which on the Chilas side of Nanga Parbat are scarce and dear); also we hoped for large supplies of jam, biscuits, Kashmir wine, and other luxuries, which had been ordered from Srinagar many weeks before. During his absence Mummery and I should do our best to push camps up Nanga Parbat.

Just south of our camp rose a snow peak which we had left on our right hand on July 24, the day we went over the pass from the Diamirai nullah. Mummery thought that this peak would give us some good climbing whilst we were waiting for the snow to clear off the Nanga Parbat rocks. Hastings had designs on a pass lying just westward of our peak, as it would enable him to save a most unnecessary *détour* on his way to Mazeno La. Accordingly on August 11 we all started together by candle light. Hastings accompanied us for some time, but we soon parted company. He got safely over his new pass, and we, in due course, arrived at the top of our peak. The height was found to be 19,000 ft. Both the Chilasi shikarri and I had headaches at the top, but Mummery never felt the least fatigue. He led the whole way—sometimes in deep powdery snow; sometimes he had to cut steps for nearly an hour at a time. The pace was quite as fast as he ever went in the Alps, and we had climbed nearly 7,000 ft. Certainly that day the rarified air had not the slightest effect on him. We left the summit at about one o'clock, not having been able to get any good views. The whole of the mountains were covered by mist. It would have been highly dangerous to attempt to descend by the steep ice slopes up which we had come, so, turning westward in the mist, we struck a sensational rock *arête*, which we hoped would lead us down on to the pass that Hastings had traversed earlier in the day. Ragobir was sent to the front.

He led us down the most perpendicular walls with tremendous rapidity, enjoying it immensely. It was all 'good' according to him, and his cheery face down below made me feel that there could be no difficulty, till I would find myself hanging down a slab of rock with only an insufficient handhold to keep me up; or I would come to a bulging mass of ice, overhanging a steep gully, which would insist on protruding into the middle of my stomach, absolutely upsetting my state of equilibrium. But we were still in the clouds and quite uncertain where our ridge was leading us to. At last, when the mist did clear for a moment, below us lay the wrong glacier, and, alas! far above us on our right the main ridge. We had descended 1,500 feet on the south side of our mountain, and our camp and dinner were reposing on the other. Up these endless slopes we must climb; but the top was reached at last, and at racing speed we hastened downwards, leaving the Chilasi shikarri far behind, and at dusk our camp was reached.

On August 12 our Kashmiri servants and coolies, whom we had sent away a week before for provisions, still had not returned. Only a little flour and about one day's food remained in the camp. We were, therefore, forced to descend the valley ourselves towards the Bunar nullah in search of the necessary provisions. The further we went the worse the path grew, till late in the evening we found ourselves unable to cross a roaring torrent, which, hemmed in by precipitous walls of rock, barred our way. Endeavours to place pine trunks across were without avail, and, notwithstanding the gallant efforts made by our shikarri, Lor Khan, there we should have had to remain; fortunately, however, just as we were beginning to wonder what we should do, far above on the crags on the opposite side our servants and coolies were seen. When they had descended to the opposite side of the stream we threw a rope across to them, and after considerable difficulty succeeded in placing a most slippery pine trunk across the roaring waters. Then we crossed to where we could camp for the night, and soon were feeding on all the dainties the Bunar nullah was capable of affording.

Next day we returned to the Diamirai camp. On the 15th we started for the rock ribs on Nanga Parbat. At the foot of the rocks I had to stop, owing to a bad headache. Mummery therefore, accompanied by Ragobir and Lor Khan, went on, ultimately pushing one bag of provisions well up the third rib of rock, leading to the upper snow-fields under the summit of Nanga Parbat. I returned the same night to the lower

camp. Mummery did not come in till late the next evening, wet through, but well pleased with the climbing.

On the 17th we stopped in camp, the weather gradually growing worse, till late in the evening a veritable blizzard, accompanied by lightning and thunder, swept down on to us. The wind howled through the few pine trees near us; the snow fell heavily, dragging down all the dwarf rhododendron bushes and covering the ground six inches deep. But on the morrow a cloudless sky with a northerly wind changed the whole aspect of affairs, and about 2 P.M. we started for the camp under Nanga Parbat again. The night was spent at the camp at the foot of the rocks (height 15,000 ft.). Early next morning Mummery and Ragobir left me, for I was by no means in a condition to undertake a long and difficult climb. The coarse food of the previous three weeks had not agreed with my digestion. As there were already two bags of provisions some distance up the rocks Mummery thought that an attempt should be made at once to reach the summit; for the weather was breaking, and every fresh snowfall came further down the mountain-side. I went back to the lower camp. On the 20th Hastings came back from Astor, bringing with him all kinds of provisions. Late that night Mummery returned from Nanga Parbat. He had passed the second night on the summit of the second rib of rocks. Starting from there he had pushed on with Ragobir up the final rock rib. He said the climbing was excessively difficult, but not impossible. At a height of about 20,000 ft. Ragobir turned ill, and, as he was quite unfit to spend another night out at that altitude, Mummery reluctantly had to return. He was fearfully disappointed, for most of the difficulties had been overcome, and he was confident that had he been able to remain another night on the mountain he should have reached the summit on the following day. Thus ended the only attempt he made to reach the top of Nanga Parbat. We spent the next two days in discussing what we should do next. Mummery, owing to the recent snow-falls, finally abandoned his route, and it was agreed that we should explore the snow-fields at the head of the Rakiot nullah, for there perhaps, we thought, the slopes of Nanga Parbat might be less precipitous.

The bag of provisions that had been left on the top of the second rib of rocks by Mummery on his descent had to be fetched down, and Mummery, disliking the interminable scrambling over loose stones which he would have to endure should he accompany the coolies over the intervening spurs

to the Rakiot nullah, suggested that the two Gurkhas should be sent early on the 23rd to bring them down to the camp at the foot of the rocks, where he would join them later in the afternoon.

From this point he could strike up the valley lying between Nanga Parbat and the 21,650-ft. peak. A snow pass at the end was all that separated him from the Rakiot nullah.

He left us early on August 23. Next morning he was seen for the last time by Lor Khan and our head coolie, who had accompanied him as far as the high camp, carrying provisions. They turned back and followed in our footsteps.

Mummery never returned; whether he was overwhelmed by an avalanche, or what happened, we shall never know.

But, though he is no longer with us, though to those who knew him the loss is irreparable, though he never again can lead and cheer us on up the 'gaunt bare slabs, the square precipitous steps in the ridge, and the bulging ice of the gully,' yet the memory of the man will remain. As a kind, thoughtful, and unselfish companion he will not be forgotten. The pitiless mountains have at last claimed him. Amongst the snow-laden glaciers of the mighty hills he rests. 'The curves of the wind-moulded cornice, the delicate undulations of the fissured snow' cover him, whilst the 'grim precipices, the great brown rocks bending down with immeasurable space,' and snow peaks he loved so well, they keep watch and guard over the spot where he lies.

IN MEMORIAM.

PHILIP HENRY LAWRENCE.

THE Club has recently lost one of its older members by the death in October, at the age of seventy-three, of Mr. P. H. Lawrence, who was elected in 1862. He gave up active climbing many years ago, but always maintained his interest in the Alps, and from time to time attended the Club meetings until 1890, after which date failing health prevented him from appearing at them. He was the translator and editor of Bernhard Cotta's book on 'Rocks,' the standard work on mineralogy. But it is chiefly for his work in connection with the preservation for the public of the great commons in and around London (such as Wimbledon, Barnes, Wandsworth, Hampstead, Plumstead, Epping, Blackheath, and many others) that he deserves to be gratefully remembered by all who love the Alps, and wish those who are unable to travel abroad to share, as far as may be, in their pleasure by enjoying the hills and open spaces of our own country. He took an active part in forming the Commons

Preservation Society, and for many years acted as its solicitor, while he was appointed one of the Conservators of Wimbledon Common on the nomination of the Board of Works.

[One of the original members of the Society has assured us that Mr. Lawrence's work during the first period of the agitation was more important, though necessarily more obscure, than that of any other person concerned; and that but for his exertions a great part of Wimbledon Common would certainly have been lost to the public.—ED. 'A. J.']

JOHN ORMSBY.

By the death of John Ormsby (October 30, 1895) the Alpine Club loses a member who joined it in the first year of its existence; and the diminishing band of his contemporaries feel that they have lost another link of association with early days. As their juniors have had little opportunity of knowing anything of Ormsby, I will venture to record a few memories which may help to show why, to a few of us, the name calls up some specially pleasant pictures. I first met Ormsby at Zermatt, in September 1859. He had just come from the first ascent (so he supposed it to be) of the Grivola, which he described in a very amusing paper in the second series of 'Peaks, Passes, and Glaciers' (vol. ii. pp. 318-338.) I fear that his claim to have reached the highest point was discredited in a controversy which followed, though I am very sure that no claimant could have been less annoyed by such a disproof than Ormsby. We soon struck up an acquaintance with the facility of youthful comradeship; and on September 13 Ormsby, with his friend Mr. Bruce, and I, with my friend Dr. Liveing, started to assail the then unconquered Weisshorn. I cannot, at a distance of over 36 years, describe our adventures minutely, nor would they deserve record from a mountaineering point of view. But I remember few even successful expeditions with more pleasure. We passed the night at a chalet above Randa. I remember how one of us had to be deprived of his boots, because he had been discovered scaling a dream Weisshorn in his bedroom on the previous night, and a repetition of the performance might involve a contact between his hobnails and our noses. I remember too Ormsby's unceasing flow of fun, and how Melchior Anderegg was convulsed by the pantomime by which our friend, unequal to German, signified his recollection of the fleas of the Grivola and his just anticipations of their colleagues on the Weisshorn. Whether it was due to the discomfort of the night or to the lateness of the season, or, as I rather think, to the irresistible propensity of Ormsby to indulge in a boundless flow of humorous talk at every pretext for a halt, we certainly failed to get very far along the route which was successfully followed by Tyndall two years later; and we were forced to return to Zermatt, defeated, but still in the good spirits which in those days were a necessary consequence of companionship with Ormsby. He had in

particular struck up a dumb friendship with Anderegg; and a year or two afterwards spent some time at Anderegg's house, above Meiringen, with the intention of shooting chamois on the Gerst. The chamois, I think, evaded him, and I suspect that he thought more of the companionship than of the sport. He left, I know, very pleasant memories behind him.

I happily kept up my acquaintance with Ormsby, and could not but appreciate his peculiar qualities. He was living, during that period, in King's Bench Walk, in the Temple. His friends often remarked that he would be an excellent representative of Warrington in 'Pendennis.' Like Warrington, he was nominally a barrister but in reality a man of letters. His chambers at once marked his character. One's first distinct impression on entering them was that his laundress must be very well drilled or enjoy something of a sinecure. The table was loaded with huge piles of books, suggesting by their appearance that they were spoils from second-hand bookstalls, which had been pitched down at intervals as they were bought and had never since been moved from their position. An investigation of the various strata would have revealed the course of his reading in chronological order. Many books, too, shabby and well thumbed, had found nooks of refuge on crowded bookshelves. Between them were old engravings from Hogarth, precious in themselves, perhaps, but framed anyhow; and in the intervals were the relics—alpenstocks, daggers, and horns, and the like—of miscellaneous vacation tours. I need hardly add that pipes and tobacco jars found plenty of odd corners in which to perch. Ormsby, one saw, was a denizen of Bohemia, but of the cultivated and scholarlike Bohemia. He was well read in English literature, especially in eighteenth-century literature; he knew Defoe and Fielding and all the Johnsonian circle by heart. One could fancy that he had made a third at the 'Mitre' to Johnson and Boswell; and he would certainly have been a welcome guest at Charles Lamb's supper parties. His mixture of humour and good-nature would there have been duly valued. I remember how, at our first meeting, he amazed some of us at Zermatt by the elaborate knowledge which he displayed of the topography of the region between Charing Cross and St. Paul's, considered especially in its relation to men of letters. He not only knew the old haunts of Goldsmith, Johnson, and Lamb, but could explain minutely where were the best modern successors to the 'Mitre'; where you could most judiciously take your chop and spend your evenings in good company; and he was intimately acquainted with the contemporary world of journalism. He knew who had written the last brilliant article and what was the true version of any bit of current literary gossip. He was himself a valued contributor to the 'Saturday Review' in its early days of brilliancy, though I do not know any details of his work. I remember, however—it is the kind of remark that one does somehow remember—how a friend of mine once said to me, 'What a charming article that is of yours in the so and so; it is quite the best thing you have ever done!' And so, I have no

doubt, it would have been had not the author been John Ormsby. Besides his 'Autumn Rambles in North Africa' (1864) he published a collection of some of his early articles, called 'Stray Papers' (1876); and I read them with much pleasure, though they belong to the class of literature which is almost of necessity ephemeral. Ormsby, as I have intimated, was a genuine humourist. His character was written on his quaint and smooth-shaven face, which used to remind me of the pied piper:—

With sharp blue eyes, each like a pin,
And light loose hair, yet swarthy skin,
No tuft on cheek, nor beard on chin;
But lips where smiles went out and in,

preparatory to a queer twinkle of the eyes and some odd anecdote told with irresistible relish and appreciation of the point. He loved odd bits of knowledge with a true antiquary's zeal, but always, as is not invariably the case with antiquaries, with a zeal tempered by a keen sense of humour.

Therefore—for I must dwell chiefly upon his character as a member of the Club—his taste for the Alps was rather different from that of most of us. He cared comparatively little for the glory of first ascents and the like. What he enjoyed was especially the element in Alpine travelling which is endangered by the growth of the tourist world. He liked the guide who was not a professional nor a courier, but a genuine peasant with a home-bred love of mountain sport; the old-fashioned village where you had to lodge with such a priest as Imseng, who exchanged legends about avalanches and earthquakes for accounts of that wonder (its fame had just reached the Alps) the Thames Tunnel; the hospitable inn, where the landlord became your friend and brewed a special bowl of punch when you departed; and, as much as anything, the tobacco parliaments held on the dwarf wall at Zermatt or on the grass slopes behind the Aeggischhorn, where four or five friends in rusty shooting coats and dilapidated slippers could chat for hours of easy loafing, under pretence that the weather was too threatening for a long expedition. The climbing sharpened one's appetite, physical and intellectual, but was hardly essential. I remember how I once sat with him in a thick mist somewhere above the Rhone Glacier, grumbling at our inability to proceed, and how he, perched on a stone, smoked his pipe, told quaint stories, and mocked unfeelingly at my impatience. And, therefore, as intrusions of the outside world became more common he took to less trodden highways. He went off one summer to Algiers, as appears from the title of one of the books I have mentioned; felt himself back in the days of Haroun Alraschid; met Aladdin, as I think he says, exchanging new lamps for old; and, if he did not meet, certainly deserved to meet the great Tartarin of Tarascon. Nobody would have enjoyed that hero's company better. And then he took to Spain, led, perhaps, by the example of George Borrow, a writer after his own heart, and delighted in rambling through La Mancha to trace the steps of Don Quixote and Sancho Panza. He learnt the language thoroughly.

He published a translation of the 'Cid' in 1879, and in 1885 a translation of Don Quixote. I am told, by those who are able to judge, that the last is a very good and scholarlike piece of work; and I can say on my account that it opens with a charming introduction.

Ormsby thus ceased to frequent the Alps; and unfortunately too he ceased to be often visible to his friends. He suffered from deafness to a degree which made it difficult to carry on conversation with him; and he had a painful impression that his company was burthensome to others. He came to my house once or twice, and was most courteous and exceedingly grateful for any friendly attention; but it was difficult to persuade him to return. He wrote an article or two for me in the 'Dictionary of National Biography' about authors in whom he happened to be interested. A few months ago I had a very affectionate letter from him, which, alas! was the end of our intercourse. If Ormsby was not a leader in the art of climbing, hardly any one in the early days of the Club did more to promote the spirit of good-fellowship by which, I hope I may say, the members were then (as I hope that they still are) distinguished. And perhaps it is pardonable that, as one grows older, one should dwell with more pleasure upon the intimacies which sprang up so rapidly in those days than upon the common pursuit which incidentally occasioned them. I will only add that Ormsby was not only a most genial companion, overflowing with kindly humour, but also a man of too refined a taste to allow his fun to decline towards buffoonery. He was always a thorough gentleman, as free from coarseness as from malice.

LESLIE STEPHEN.

CORRESPONDENCE.

EMILE REY AS A TRAVELLER.

To the Editor of the ALPINE JOURNAL.

WITH Emile Rey I made in the Alps but a single ascent, that of the Aiguille Verte, in 1881, in company with the Oberland guide, Andreas Maurer, my travelling fellow in the Sikkim Himalayas. They are now both dead, both fallen on the *champ de gloire*. Of Emile Rey, and of what he has done in the Alps, others have written. I wish only to add a few words showing him as a traveller. In 1881, in the Alps, on the above-mentioned ascent, made after heavy snow storms and under very unfavourable conditions, I had seen enough of Emile's powers to be desirous, when, in 1888, preparing a climbing expedition to the Central Caucasus, to invite him to join me. Emile Rey was glad to accept my proposition. I left him the choice of a second guide, and he selected young Johann Fischer, of Meiringen, who has made with him some very difficult ascents, and spent, I think, the winter at Courmayeur in his house. I was at that time about to visit Bosnia

and Herzegovina on an official Government mission in the early summer, and we arranged that Rey should go with me for some mountaineering in those far-off and little-known mountain chains. At the beginning of July we intended to leave the Bosnian-Herzegovinian Alps direct *en route* for the Caucasus, where Fischer was engaged to meet us. Rey came to Budapest, my home; he was happy to travel and see something of the world. Budapest, the splendid Hungarian capital, pleased him very much. He also was liked by everybody to whom I presented him. There was nothing of the heavy behaviour of the Alpine peasant. He moved like a well-educated man and with a certain quietness and easiness.

We came to the uncivilised mountain regions. We had to sleep many nights under canvas. The difficulties of the tent life and of the commissariat began; he did not understand the language of the people. As everywhere in remote countries, especially in the East, there was no idea of time; there were eternal delays. But Rey was not bewildered, as most of the Alpine guides may be, when transported suddenly from their hospitable homes to wild countries. His higher intelligence guided him. He assisted me to overcome those difficulties, and I saw he was the right man for distant mountain chains. I told him my satisfaction. He accepted it, but he added with a certain pride, that I should see what Emile Rey, when once on the spot—once on Koshtantau, Dykhtau, or Ushba, names which, through my narratives became familiar to him—would be capable of doing. 'You shall see Emile Rey climb when a great peak must be climbed.' His wish was not realised; my official duties retained me longer than I thought, and then I received unfortunate news from my family, which compelled me to go to Vienna. Rey came with me to Vienna and left for Switzerland. Already, at the request of the regretted Mr. Donkin, I had telegraphed that Fischer might join his expedition. On the very same mountain where it was proposed that both Rey and Fischer should have worked together, Fischer fell a victim to a cruel fate. Was the mountain in such a state that in that year it was to be the grave of those who had to attack it? Rey was thus saved through my not going there, but the fate was fulfilled: he was taken away in his very home in the Alps, instead of in the Caucasus. It fell not to his lot to see the far-off mountain, although he desired it very much; his Bosnian tour was his furthest journey. He was pleased with it, as I saw from the letters which he wrote to me frequently afterwards. He proved there that he was a mountaineer and a traveller, but, above all, a faithful fellow and agreeable companion, a man with his heart in the right place, beloved of all who met him.

MAURICE DE DÉCHY.

THE ALPS OF NEW ZEALAND.

To the Editor of the ALPINE JOURNAL.

College House, Christchurch, New Zealand :

November 22, 1895.

DEAR SIR,—I have only recently returned to Christchurch from my work on the West Coast, and have only now had the pleasure of reading Mr. E. A. FitzGerald's paper in the August number of the Journal.

The work done by Mr. FitzGerald, with his guide, was most successful, and I was glad to be able to congratulate him personally when we met. Without intending in any way to lessen the credit due to him, I would wish to correct one statement contained in his paper.

On p. 472 the following sentence appears:—'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.'

A statement also appears in the 'Contemporary Review' for August enlarging upon the fact that the ranges have never been crossed, and also stating that a route was required to connect Christchurch with 'the gold-washing districts of the West Coast,' so as to avoid the necessity of going around the island.

The following facts will, I think, be sufficient to correct the impression conveyed by the above statements:—

Firstly, as to the range never having been crossed, I cannot do better than refer you to my paper in the 'Geographical Journal' of January 1893, actually quoted on the page next to the statement in the 'Contemporary Review' to which I take exception. The range has been crossed in at least twenty places between the years 1857 and 1893, including three passes above the snow-line—namely, by Mr. Roberts at the head of the Rakaia River some fifteen years ago, by three parties at the head of the Godley Glacier, and by Messrs. Fyfe and Graham at the head of the Mueller Glacier. A coach road, unsurpassed by any I have seen in Switzerland, has for nearly thirty years joined Christchurch with the 'gold-washing' districts of the West Coast, and even allowing it to be possible to take a road over FitzGerald's Pass practicable for coaches, the present road enables the journey to be done in a day and a half, as against four or five days under the most favourable circumstances *via* FitzGerald's Pass.

Secondly, as to the object of the route desired by the Government and the steps taken to find a pass.

The New Zealand Government wished to find a col feasible for a horse track, to enable tourists to go from the Hermitage to the

West Coast direct, instead of having to return to Christchurch and go by one of the more northern passes.

The instructions were 'to look for a saddle free of snow and ice for three months in the year,' which would enable a horse track to be taken direct from the Hermitage to the West Coast.

Mr. C. E. Douglas was sent in 1892 up the Copland River, and seeing snow and ice all along the range at its head, he reported that no such saddle as required was to be found there. In 1898-94 I was engaged with him, and in 1894-95 by myself, and we are the only two who have been at this work.

From my previous work on the East Coast glaciers I at once said it was impossible to find a pass free of snow and ice between the Godley Glacier in the N. and Mount McKerrow in the S., but we were told to go up and explore the hitherto unexplored Warho and Cook Rivers, and make a reconnaissance survey and report generally on the country. This year I was sent into the Karangarua and Landsboro Rivers, to report on the possibility of a track up the former and down the latter river to Brodrick's Pass (some 4,500 ft.), and so round *via* Lake Pukaki to the Hermitage.

This route, though possibly practicable, involved a distance of from seventy to ninety miles from Scott's house to the Hermitage, instead of twenty-five miles or so as the crow flies, so I reported against this, still maintaining that the most likely route would be up the Copland and over by some saddle into the Hooker Glacier. This opinion had been freely given by Mr. Brodrick, myself, and others since 1892, so, in despair of finding a saddle 'free of snow and ice for three months in the year,' allowing a direct route from the Hermitage, the Westland Survey Department sent me instructions in February 1895 to go up the Copland River and over to the Hermitage and report.

I was starting up for this purpose when Mr. FitzGerald came down to my camp.

I do not for one moment begrudge him the first passage of the col, and, in spite of missing this pass by only four days, I congratulated, and still do congratulate, him on his discovery, for though such a pass was more or less known to exist, and probably would have been crossed and reported on in 1892 or 1893 had not the condition as to snow and ice been made by the Government, yet he heard nothing of it and made his discovery fairly, and was the first to cross it.

My object in writing is merely in justice to New Zealand enterprise and to Charlie Douglas, one of the finest explorers I have ever met, and to myself; for I do not care to see those who have done honest work without advertisement placed in a false position, owing to a misconception of the object for which they were working.

At high peaks and difficult rocks Douglas and I will gladly take any place assigned to us by others, but being almost the only ones who have been exploring in Westland, we cannot consent without protest to take even a second place in such work as this pass involved, and, therefore, I feel bound to correct the obvious impression,

conveyed by the paper, that we had tried to force a way over the ranges and had been unable to do so.

In conclusion I must ask FitzGerald to forgive me for writing this, and assure him that my views with regard to the excellence of his and Zurbriggen's work here are the same as those expressed by that ragged, long-haired, and bearded ruffian who put in such a jolly week with him in March 1895.

Yours faithfully,

ARTHUR P. HARPER.

P.S.—I am sorry to say that the Government are not putting a track through *via* FitzGerald's Pass, as stated on p. 475, nor is there any immediate prospect of a road being made, owing to the expense (see my report, which I am sending for the Library); which will be considerable.

THE ALPS OF NEW ZEALAND.

To the Editor of the ALPINE JOURNAL.

2 Green Street, Grosvenor Square, W.:

January 16, 1896.

SIR,—I have to thank you for your kindness in forwarding to me Mr. Harper's communication to your Journal. To that portion of it which, in my judgment, requires an answer I hasten to reply.

Firstly, Mr. Harper takes exception to the statement published by me in my paper of the August number of the 'Alpine Journal,' p. 472.

On p. 472 the following sentence appears:—'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.'

And again in the end of the preface to my article in the 'Contemporary Review' for August, which, according to Mr. Harper, 'enlarges' upon the fact that 'the ranges never had been crossed,' and also states that the 'route was required to connect Christchurch with the gold-washing districts of the West Coast, so as to avoid the necessity of going round the island.'

This last editorial preface, I hasten to remark, was, as is indicated sufficiently, not written by me, but published before my return to England, under the care of Sir Martin Conway, to whom I entrusted my journal, and the writer went for information to an article of Mr. Harper's own writing in the 'Geographical Journal' of January 1893, and to an article published in a leading Christchurch journal, the 'Daily Press,' while I was still in the mountains, entitled 'A New Pass to the West Coast,' in which is to be found the phrase, 'The Lands and Survey Department . . . recognise the importance

of a discovery of a practicable route between the Hermitage and Southern Westland.' 'But,' says Mr. Harper, 'the range has been crossed in at least twenty places between the years 1857 and 1899.' Of these twenty achievements he then proceeds to enumerate seven, which, I presume, are selected as the more brilliant records for special mention. Of these I see that only one refers to the Southern Alps of New Zealand, the rest all being on other ranges, and therefore having nothing to do with my statement. Messrs. Fyfe and Graham ascended the Mueller Glacier, and went over the Baron's Saddle, some little distance down on the other side, and attempted to force their way to the West Coast, but, owing to the difficulty of the route and their lack of provisions, they were forced to return to the Hermitage, having thus failed to make a practicable path to the West Coast. This was the fact. To describe merely reaching a divide, and, after a very short excursion down the other side, returning by the same route to the original starting-point, as crossing a range of mountains, is a new and singular departure from the usual language of exploration.

As to the coach road which joins Christchurch to the western coast, it does not in any sense cross the ranges of the Southern Alps. And as regards the gold-washing districts, this route does indeed form an admirable connection between Christchurch and Hokitika, but there it stops short. To descend along the coast to either Gellespie's Township or Okarito, a distance of some eighty miles, involves considerable difficulty and danger, owing to the sudden floods and heavy tides, there being no practicable route and the journey having to be accomplished along the sea beach. In any case it is a journey of several days. Owing to the fact that there are no bridges, any rainfall in the ranges makes it impossible for the traveller to proceed. While, as to the statement that this route enables the journey to be done in a day and a half, as against four or five days under the most favourable circumstances by FitzGerald's Pass, once a track, even of the simplest sort, cut across the latter, it baffles my imagination to discover how Mr. Harper expects to spend more than a day in traversing a distance which Zurbriggen and I covered in sixty-four hours, though we were practically without food and literally fighting for our lives through the dense and almost impenetrable barrier of scrub. The actual distance is about twenty-five miles.

Besides, I notice that Mr. Harper, in his report to the New Zealand Government for this year, states that he himself has cut a track down the Copland, which would enable a good walker to reach the mouth of the Karangarua River in eighteen hours from the Hermitage. Some years ago it was usual to accomplish the journey from Farlie Creek, the nearest railway station, to the Hermitage in one day by regular coach service. The coach *via* Arthur's Pass from Christchurch to Hokitika takes a day and a half.

Mr. Harper next deals with his interpretation of the New Zealand Government's object in finding a path.

I here quote from the published reports of the New Zealand

Department of Lands and Surveys for 1893, from p. 42. 'If I have failed in the main object—namely, to discover a path available across from the main range to the Hermitage—yet the Department will now have the country mapped out,' &c. This occurs in a report signed by Mr. Charles E. Douglas, to whom Mr. Harper subsequently alludes as 'one of the finest explorers I have ever met.' To Mr. Harper's testimony on this point I gladly subscribe. Had Mr. Douglas continued up the river which bears his name at the head of the Copland Valley, I do not presume to dispute the possibility of his having found the path which, instead, it has been my good fortune to discover. But of this I am not competent to judge. My attention was concentrated upon the passage of the range from the other side, and I came as a complete stranger to what had been the field of Messrs. Douglas and Harper's operations for several years.

'Mr. Douglas,' Mr. Harper proceeds to relate, 'was sent in 1892 up the Copland River, and he saw snow and ice all along the range.' Hence his unfavourable report. But, had he looked a little closer, and gone up the Douglas Valley, he would have seen no snow or ice at the point where I crossed, for none exists just there, on the western slope, during the summer months. This is clearly proved, as I crossed the range at the end of February (corresponding in our northern hemisphere to September), two days after a heavy snowfall, and found the W. side free of snow. This sufficiently establishes the fact of that freedom from ice and snow of my pass on the W. side during three months of the year, which, according to Mr. Harper, was the *sine qua non* of the Government's requirements. What little snow or ice is to be met with here while crossing is solely on the eastern side, and could be traversed in about twenty minutes.

Mr. Harper proceeds to state that ever since 1892 he and Mr. Brodrick had been in the habit of setting forth the probability of the required col being found 'up the Copland and over by some saddle into the Hooker Glacier.' But it seems to me strange that this piece of information should have remained unrecorded until a date subsequent to my discovery of the route in question, and that men capable of such remarkable work should have held such an opinion for years, while continuing their exploration in quite contrary directions. We are informed further that Mr. Harper was about starting on this very expedition when I appeared on the scene. It is strange that, in view of the extreme worthlessness of my pass, as implied by Mr. Harper's language, and its total failure to meet the requirements laid down by the Survey Department, he should still feel it necessary to assure your members that not for one moment does he begrudge me the first passage of this saddle, in spite of his having himself missed it by only four days. I am sorry that Mr. Harper should have been prevented from putting the finishing touch to the valuable work of years by an outsider. Yet I am consoled by the magnanimity with which Mr. Harper congratulated, and actually still congratulates, me, in spite of the

fact that such a pass was more or less known to exist, and would probably have been crossed and reported on in 1892 and 1893 had not the condition as to snow and ice been made by the Government.

Alas for this latter reason! The snow and ice existing on my pass could not by these survey explorers have been even seen, as from no point in the western valleys is it visible. I am unable to see how those who have, as Mr. Harper says, 'done honest work without advertisement,' are, by any act or word of mine, 'placed in a false position.' I am glad of this opportunity of testifying to the high excellence of the work done by these explorers in Westland, which I have never called in question. Mr. Harper says that he and Mr. Douglas cannot consent without protest to take even a second place in 'such a work as this pass involves.' Beyond all doubt they have done and will do 'such work as this pass involves,' and superior work on other passes and in other valleys. But, this admitted, the fact remains that I was the first to cross the pass. If, by taking the second place, Mr. Harper alludes to the circumstance that he followed up my route subsequently and, as he states, 'cut good blazed tracks' while in the employ of the New Zealand Government, I can only say that I highly appreciate this testimony to the validity of my statement as to the interest aroused by the discovery of the route.

In view of the existing financial circumstances of the New Zealand Government I well know that time must elapse before even the simplest form of permanent road can be hoped for.

I remember with pleasure the return journey alluded to by Mr. Harper, who accompanied me and my Swiss guide, Zurbriggen, up the Fox and Franz Joseph Glaciers, and so back to the Hermitage. I regret that, owing, no doubt, to some misunderstanding, Mr. Harper neglected to convey accurately to the New Zealand Survey Department my precise wishes as to such names of peaks and glaciers on this route as it was, by immemorial custom, my right and privilege to place upon them.

It is with reluctance that I write this letter, but seeing that Mr. Harper's communication might be taken as a disparagement of my own account of my work in the Journal of the Club of which I am so proud to be a member, I feel that no course is open to me but to publish these few words of explanation.

I have the honour to be, Sir,

Your obedient Servant,

EDW. A. FITZGERALD.

THE 'FACSIMILE OF CHRISTIAN ALMER'S
"FÜHRERBUCH."'

To the Editor of the ALPINE JOURNAL.

SIR,—In the Introduction to the above work there are several misstatements relating more or less closely to myself. In the interest of Alpine history I wish to correct in these pages some of the more important of these mistakes.

1. *P. x, note.*—'Christian III.' (old Almer's grandson) in 1894 ascended the Rosenhorn with me, *not* the Hasli Jungfrau.

2. *Pp. xiii-xiv, xvi.*—Almer began to explore Dauphiné in 1864, four years before he first joined me in 1868. With me, between 1870 and 1884, he explored the whole of the South-Western Alps (save the Cogne bit) from the Col de Tenda to the Little St. Bernard—i.e. *besides* the comparatively small district which is usually called 'Dauphiné,' the Maritime, the Cottian, and the Graian Alps. Mr. Cunningham suggests that I kept Almer a prisoner in 'Dauphiné' during the greater portion of sixteen years (we travelled there in the course of *fifteen*, not sixteen, summers together). Now I find on reference to my own entries in his 'Führerbuch' that in *six* of these fifteen years between 1870 and 1884 we climbed in the Bernese Oberland together, while in each of three (1871, 1872, and 1874) of those six years we made, indeed, *two* distinct journeys in that district. During those fifteen summers we climbed *as well* in the Mont Blanc, Monte Rosa, Tödi, Adamello, Brenta, and Dolomite ranges. I am far from considering Almer's ascent (with me) of the Pic Central of the Meije (possibly the writer confounds this summit with the higher western peak, first climbed by M. Boileau de Castelnau) his 'greatest achievement' during our joint climbs. It was not the loftiest new point we scaled together, and it was a long way from being our hardest climb, having been excelled in point of mere difficulty by not a few of our 'new routes.'

3. *Pp. xiv-xv.*—In an involved sentence Mr. Cunningham confounds two different transactions as to my dog Tschingel. Mr. George (in his book published in 1866) records the *purchase* of Tschingel by Almer, in September 1865, for 10 fr.: she was *given* to me by Almer in July 1868, under circumstances which I have recounted in my 'Life' of Almer in 'Pioneers of the Alps' (published in 1887). The writer is mistaken in saying that my dog was able to take part in my 'most arduous ascents.' On these, greatly to her disgust, she had to be left behind.

4. *P. xvi.*—The reason why Almer did not travel with me after 1884 was that (as he assured me) he was no longer capable of climbing continuously nearly every day for three months or so. That was the sole reason why we no longer went together. As the pages of his 'Führerbuch' show, we had pretty well exhausted the Oberland mountains in our journeys. Of the taste of the expressions used by Mr. Cunningham with reference to the cessation of Almer's professional connection with me (by far the longest he has ever had with any single amateur) I leave the readers of the Introduction to judge. There has never been a shadow of difference between me and my old friend not of one or two, but of many summers and winters.

I have further to call the attention of your readers to a matter of very serious importance—the action of the editors in issuing this work. I wish to state in the most distinct manner that my permission was never asked, still less given, for the publication of any

of my entries in Almer's 'Führerbuch.' I am also requested by Almer to make public the following facts, which he has communicated to me for that purpose, and the chief of which he has also embodied in a sworn affidavit. He desires it to be known to his friends and the English public that his 'Führerbuch' was originally borrowed from him *indirectly*; that the book was sent to England without his knowledge or consent, and that he has in vain applied for its return, and has up to the present moment been unable to recover it. He states in the most emphatic manner that he has not in any way authorised the reproduction of his book, and he alleges that its unauthorised publication has robbed him of a valuable property.

I am, Sir, yours truly,

W. A. B. COOLIDGE.

[A copy of the affidavit mentioned in Mr. Coolidge's letter as made by Christian Almer has been forwarded to the Editors of the 'Führerbuch,' so as to allow of any statement on the subject they might have wished to make appearing in the present number of the 'Alpine Journal.'—EDITOR 'A. J.']

NEW EXPEDITIONS IN 1895 (*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.]

Bernese Oberland.

EBNEFLUH (3,964 m. = 13,006 ft.) FROM THE ROTHTHAL. *August 2.*—Mr. Claude Macdonald, with Christian Jossi, and Peter Bernet as porter, traversed this peak. A late start was made, owing to the valley being full of fleecy clouds. The party only got away from the Roththal hut at 4.30 A.M., and made straight up towards the N.E. corner of the bergschrund at the foot of the Ebnefluh. They then bore S.W. and crossed the schrund at 7 A.M. directly under two patches of rock, vertically one above the other, and about 50 yards apart. The snow was in good condition, though the mountain here is very steep, and the top rocks were cleared at 9. The slope then got much steeper and the ice hard and blue, and it was 1 P.M. before a patch of rock high up on the left was reached. These rocks were found rotten and very dangerous with fresh snow, and extreme care had to be exercised. At 5 P.M. it was decided to leave the rocks and get under a hanging glacier lying E.N.E., where it

was easier going, there being little choice in the way of danger. The party worked under this diagonally to the right for an hour, when a formidable bergschrund barred the passage, but was crossed at 6.15 p.m. Here clouds began to come up, and it became doubtful if the weather was going to hold out, but, the angle of the mountain lessening considerably, the party cut their way up a slope bearing away to the N.E. again, and reached the summit at 7.15 p.m. What between the rottenness of the rocks, the tremendous angle of the ice, and weather beginning to break in the afternoon, the party had had but little time for halts, and it was 8.80 p.m. before they had their first meal. The descent, but for the lateness of the hour and the fact of the glacier between the Lötchenlücke and the Concordia hut being much crevassed, was easy, and the Concordia hut was reached at 1 a.m., the traverse having occupied $20\frac{1}{2}$ hrs. Just before getting in a very heavy thunderstorm came on, the lightning being fearfully vivid and the effects on hair and ice axes most uncanny, and reminding the party of their experience on the Lyskamm and of Mr. Slingsby's party on the Dent Blanche.* The expedition proved highly interesting, but more difficult and dangerous than had been anticipated, bearing out the opinions of the Lauterbrunnen guides, who pronounced that it would not go, and of old Christian Almer, who had crossed the Ebnefluh Joch with Revs. J. J. Hornby and Philpott and Mr. Morshead in 1866.†

ANENGRAT. *September 2.*—This ridge, composed partly of rocks and partly of snow, which runs S.E. from the S. peak of the Mittagshorn (8,895 m.) to the Lötchenlücke, has five well-marked peaks. The northernmost and highest, which has no number on the Siegfried map, but must be over 8,700 m., was ascended by T. W. Danby and H. V. Reade, with Theodor and Johann Kalbermatten, of Ried, the expedition being undertaken in the hope of finding some traces of the accident of July 16. From the head of the Anenfirn a steep glacier, split into enormous crevasses, was ascended in a N.E. direction to the highest peak in about $2\frac{1}{2}$ hrs. From this the ridge falls sharply to the Anenjoch,‡ which was reached in 25 min., then rises steeply again to a snow peak, attained in 20 min. more. It is not certain whether this, or a little rock-peak reached in another 50 min., is the point marked as 8,681 m. As time did not allow the party to follow the ridge over the two remaining peaks, 8,575 m. (the Anenknubel), and a nameless double-headed rock peak, to the Lötchenlücke, a descent was made S. to the Anenfirn in about $1\frac{3}{4}$ hr.

KLEIN BIETSCHHORN (8,348 m. = 10,985 ft.). *August 9, 1884.*—Mr. G. Yeld, with Alphonse Payot and Seraphin Henry, ascended this point in 4 hrs. from Ried. They went, roughly speaking, straight up the face.

* *Alpine Journal*, vol. xv. p. 415.

† *Ibid.* vol. ii. p. 410; vol. iii. pp. 86-8.

‡ *Ibid.* vol. xvi. p. 519.

SCHIENHORN (8,807 m. = 12,491 ft.) **DIRECT FROM THE LANGGLETSCHER.** *July or August.*—We are informed that three Ried guides, while searching for the bodies of Mr. Benecke and Mr. Cohen, discovered a new route up this peak, direct from the Langgletscher at its N.W. foot. No particulars of the climb are given, save that the party gained by this direct route the S.W. arête, 100–150 m. (probably about the point marked 8,670 m. on the Siegfried map) below the summit. As there was no object in going further, they returned, so that the complete route has not been made. The men were Josef Rubin and Johann and Gabriel Kalbermatten.

EIGER (8,975 m. = 13,042 ft.) **BY THE KLEIN EIGER.** *January 7, 1896.*—The Rev. J. Outram and Mr. F. W. Oliver, with Ulrich and Hans Almer, and young Ulrich Almer (eldest son of Ulrich Almer), ascended the Eiger by a route which is, to a considerable extent, new. Starting from the Little Scheidegg Hôtel at 2 A.M. the Eiger Glacier was reached at 5 only, owing to the deep powdery snow. After the lower séracs had been threaded the party took to the rocks of the S. face of the Klein Eiger, which were also deeply covered with deep powdery snow. From the top of the Klein Eiger the S.W. ridge of the Eiger was followed to the summit of that peak, gained at 2.15 P.M. Whilst the snowy portion of this ridge (connecting the Klein Eiger and the Eiger) was in excellent condition, an awkward traverse round a boss of rock at its junction with the Klein Eiger was unavoidable, and much delay was caused by the ice-covered state of the rocks below the summit. On the descent the upper level of the Eiger Glacier was gained by a glissade from the same snowy ridge, and that glacier followed to its end, this route from the snowy ridge onwards having been previously traversed by Miss Brevoort and Mr. Coolidge July 14, 1871.* The Little Scheidegg was regained at 6.30 P.M., and Grindelwald soon after 9 P.M. For the purposes of winter climbing the route here described offers certain advantages. It is full of variety and interest, while it is on the whole less unsafe than the ordinary W. ridge, when the latter has a deep covering of snow.

Mont Blanc District.

COL DES FOURCHES (3,434 m. = 11,267 ft.. Kurz). *July 14.*—MM. Louis Kurz and P. Bovet, with Justin Bessart, made the first passage of this col in modern times. Starting from the Saleinaz Club hut at 3.40 A.M. (for the pass leads to the Saleinaz Glacier, not to the Trient plateau, as shown on the Siegfried map) they gained in 2 hrs. the foot of the great snow couloir which forms the E. side of the pass. After a halt of 20 min. they mounted direct to the rocks which divide the upper part of the couloir into two arms. That to the N., leading straight to the col, seemed too steep, so that they kept at first up the S. arm, then bore slightly to the right, and by a very steep little gully and a chimney gained

* *Alpine Journal*, vol. v. p. 277.

the pass at 10 A.M., which was traversed rather S. of the lowest depression in the ridge. The descent on the other side is perfectly easy. This pass is said to have been crossed in 1838 by Principal Forbes' guide, Michel Charlet; but Principal Forbes himself, July 20, 1850, having gained it from the Tour Glacier, considered the descent to the Saleinaz Glacier impracticable, so went round by the Col Blanc to the Trient plateau (see M. Kurz's 'Guide to the Chain of Mont Blanc,' p. 12, note).

Grand Combin District.

AMIANTHE (3,600 m. = 11,811 ft., S. map).—This peak was climbed from the E. on August 26, 1895, by Messrs. H. V. Reade and T. H. Dickson, without guides. Starting from the Chanrion Club hut, they left the Col de Fenêtre path a few minutes after crossing the Drance, and ascended the grass slopes of Mt. Avril, close to the right moraine of the Glacier du Mont Durand, for about an hour, up to a point where the grass was cut off from the moraine by cliffs. They then followed the moraine for half an hour, and, taking to the glacier just above the icefall, kept on the right bank at first, then crossed, to avoid crevasses, at about the line 2,680 m. to the small medial moraine just below the Tour de Boussine, from the end of which they made almost straight for the steep snow-slopes of the peak. The number and variety of the crevasses made the ascent decidedly interesting, but the presence of a large stone-man, enclosing a pole, on the summit showed that it had been done before. The time was 6½ hrs. from the hut, but, as the pace was slow throughout, the ascent should not take more than 5 hrs.

BEC D'AGET (2,983 m. = 9,787 ft.) *August 24.*—The same party, seeing from Mr. Benecke's note in the 'Alpine Journal' (vol. xvii. p. 253) that this little rock peak had not been ascended, climbed it by the rock arête running about W.N.W. This gave a stiff little scramble of half an hour from the glacier. The descent was made by rock and grass on the S. face without any difficulty. The route from Fionnay is that for the Col de Louvie and Col du Mont Fort, but it may be noted that the time quoted in the directions for the latter on p. 50 of the 'Central Pennine Guide,' 2½ hrs. to the foot of the little glacier E. of the Bec d'Agèt, seems impossible. From Fionnay to the chalets on the Louvie Alp is a good hour and a half (*v. sub* Col de Louvie), and thence to the glacier at least as much, though there is a path most of the way.

Arolla District.

DENTS DES BOUQUETINS (3,848 m. = 12,625 ft.) BY THE E. ARÊTE. *September 4.*—Mr. E. C. Oppenheim and Mr. Gerald Arbuthnot, with Jean Maître and Joseph Pollinger, made this new route. Leaving the Arolla hôtel at 2.35 A.M. and following the route of the Col des Bouquetins, they crossed the bergschrund on the eastern side of the Central peak of the Dents des Bouquetins to

the south of the broad couloir of snow and ice (6 hrs.). From here an easy scramble southwards over broken rocks took the party on to the E. arête (10 min.). This was followed until a little gap with a cornice of snow was reached (1 hr. 5 min.). Here they turned on to the northern face of the arête and climbed over plâques and ice, regaining the arête a little below the big gendarme (1 hr. 15 min.). This was turned on the northern side (25 min.), and following the arête over somewhat difficult and loose rocks they reached the point where it joins the main ridge (1 hr.). Turning northwards, the summit (8,848 m.) was gained without difficulty in 5 min. The time from Arolla to the top of the peak (including halts) was 10½ hrs.

MITRE DE L'ÈVÈQUE (8,672 m. = 28,130 ft.) BY THE E. ARÈTE. *September 6.*—Mr. L. C. F. Oppenheim and Mr. Gerald Arbuthnot, with Jean Maître and Georges Joseph, made this new route. Starting from the Arolla hôtel at 4 A.M., the party followed the Col de Collon route until they arrived at the foot of the little glacier which descends between L'Echo and Mont Collon from the E. face of the Mitre. They ascended this and bore southwards to the little gap between L'Echo and the eastern arête of the Mitre. Scrambling up over broken rocks and snow, the arête was gained (15 min.) and followed to the summit (5 hrs. 10 min.). The two big gendarmes were both turned on the northern side, the second one presenting considerable difficulty. The time from Arolla to the summit (including halts) was 10 hrs. 50 min.

AIGUILLE DE LA ZA. *August 24.*—Messrs. C. Cookson and P. Fletcher, with Pierre Maître and F. Truffer, made a variation in the route by the W. face. On coming round the foot of the rocks into the snow couloir S. of the peak, up which it is usual to go some distance before taking to the rocks, they were driven back by a heavy rock-fall from a high ridge S. of the Za, followed soon after by a second fall.

They then took to the rocks at the top of a small snow-patch, which from Arolla seems exactly under the peak, and climbed nearly straight up until turned after nearly an hour by smooth slabs into a gully S. of the central rib, from which they worked back to the rib, and followed it pretty closely to a rock platform just below the W. point of the shoulder under the big gendarme. Thence by a traverse to the S. of the gendarme the usual route was joined and followed to the summit. The climb was not easy, and required care on account of loose stones, but was safe from rock-falls such as turned the party in the morning and were repeatedly seen during the succeeding three weeks.

NORWAY.

Gjegnatund District.

RISE TO GRÖNDAL. *July 24.*—Messrs. Hubert Congreve and A. L. Bill, with Peder and Tidemand Rise as guide and porter, left Rise at 4.30 A.M., reached the lovely Rise lake at 4.40, rowed

over to the head at 5.20, gained top of steep wooded cliff at 6.30. Then they turned south-east and climbed Kjeipen from the Rise both over a much-crevassed glacier and up some steep rocks. The summit was reached in 5 hrs. and 20 min. from Rise, excluding halts. From the summit they followed the route taken by Messrs. Hopkinson and Slingsby in 1885* as far as the Marie Tind † in thick mist. Leaving the Marie Tind and the Tre Mænds Tind (Sagen) on their left hand, they proceeded due east over steep crevassed névé, and reached rocks in 6 hrs. 50 min. from Rise. Here they unroped. They then descended to the Store Botn Vand, crossed the streams near the N.E. end of this tarn, and gained a depression in the ridge which faced the party. From here, going south, they descended very rough conglomerate rocks to the top of the waterfall above Gröndal Sæter. They reached this sæter in 11¼ hrs. from Rise, and the farm of Gröndal 1 hr. 10 min. later. This very varied and interesting expedition would be improved by omitting the ascent of Kjeipen and substituting that of the Marie Tind.

The Justedals Bræ.

THE MUNDAL SKAR (about 7,500 ft.). July 2.—Herr K. Bing, with Johannes Mundal as guide, made the first recorded passage of the so-called Jöstefond, between Fjærland and Gröndal.‡ The descent on the western glacier was very steep. From Gröndal they walked over the low col to Söknesand, which they reached in 12 hrs. from the hotel. This pass, which has frequently been recommended by the present writer to young climbers anxious for new work, is Nature's sole western outlet for the Mundal. The only reason why it has been so long neglected probably arises from the fact that the upper part of the Gröndal, which is, in fact, anything rather than what its name betokens—a green valley—is uninhabited.

ASCENT OF BRIXDAL'S BRÆ.§ July 5. -Herr K. Bing, in company with Rasmus Aabrække, attacked this most formidable glacier, and, strange though it must appear to each one of the many hundreds of tourists who gaze upon this chaos of ice annually, the plucky native wielders of the ice axe were successful in hewing a way for themselves up this huge icefall of hard compressed blue ice. True, they were hacking their way without rest from 7.35 A.M. until 4.30 P.M.; still, they got through, and, provided that the game was worth the candle, they are most heartily to be congratulated. At 6 P.M. a snow storm assailed them. At 8.30 they reached the highest part of the Justedals Bræ, and at 11 P.M. they were benighted near the head of the Kvandals Bræ. A view of the Brixdals Bræ certainly does not suggest a highway. As for that, neither does the still more savage Kjendals Bræ,|| and has not that

* *Alpine Journal*, vol. xiv. p. 380.

† *Aarboeg for Bergen's Turist Forening for 1894-95*, p. 70.

‡ *Nor. Tur. For. Aarboeg for 1881*.

§ *Alpine Journal*, vol. xvii. p. 353.

|| *Ibid.* vol. xi. p. 152.

too been descended? It is a very pleasing duty to record brilliant mountaineering successes gained by Norskmen in Norway.

W. C. S.

NY SÆTER TO TUNBERGSDAL. *August 9.*—Messrs. E. V. Mather, C. W. Patchell, and Dr. Simpson, with Johannes Vigdal as guide, crossed the great south-eastern arm of the Justedals Bræ and the peak Kvitokol from Ny Sæter in the Langedal to Tværdal Sæter. They descended by the rock buttress which separates Tværdal and the huge glacier, the Tunsbergdals Bræ.* Time occupied, 12½ hrs. A Norsk party in 1894 crossed the same snow-field by a rather different route.

Horung-Tinder.

DYRHOUGSTIND FROM THE SKAGASTÖLSTIND'S HUT. *August 14.*—The last-named party, without Mather, climbed the Dyrhougstind direct from the hut by a very steep rock rib, which afforded 4 hrs. of excellent climbing. The descent to Turtegrö was made by the narrow northern arête. The whole expedition occupied 14 hrs. actual going. The scenery is superb.

Söndmöre District.

BLAATIND OR KJÆRRINGA. *September 5.*—Mr. C. W. Patchell and Dr. J. Simpson ascended this pretty double-peaked mountain direct from the farm Kjölaas by a steep and rather awkward gully and narrow rock ridge, and returned by the same route. The time occupied up and down was 9 hrs.

VASDALSTIND. *September 10.*—Dr. Simpson, with Sivert Nupen, climbed this pretty aiguille from Örstenvik by way of the Nupedal, and descended into Vasdal, a most interesting and short expedition of 7½ hrs., exclusive of halts. Climbers in Cumberland will doubtless recognise the name Wasdale or Wastdale in the Norsk Vasdal, which signifies in Old Norsk a valley in which there is a tarn or lake.

CAUCASUS.

KARTSH-CHAL (GROUP NEAR FRONTIER OF SOUTHERN CAUCASIA).—Starting-point Batum: follow Artwin road from Batum to Bortshka, a Cossack outpost; 7-8 hrs. drive, the road following right bank of rapid river Tshorok. Road leads in S.E. direction about as far as Maradit village, thence due S. to Bortshka. Here a river called Bagini Tskhali, coming from the Kartsh-Chal mountains, joins the Tshorok. The Kartsh-Chal hills lie E. by N. of Bortshka. Follow river joining the Tshorok through various valleys to Otingo, which consists of a few huts surrounding a hot spring. Otingo lies in the upper part of a valley leading in a S.W. by N.E.

* *Alpine Journal*, vol. xi. p. 148.

direction to the Kartsh-Chal Peaks. Position of Otingo: latitude, $41^{\circ} 18' 24''$; longitude, $42^{\circ} 8'$.

The entire group of mountains forms a curve, but the main ridge runs from N. to S. The north-western summit is called Batum Peak, and southernmost elevation Artwin Peak. There is a small glacier with Bergschrund on the N. side of a small pass between Batum Peak and main central ridge. From the latter a number of couloirs descend, some filled with snow and ice; lower down on the W. side small snow-fields and old moraine.

August 8.—Harry Runge and W. Rickmer-Rickmers ascended Batum Peak, about 11,800 ft. Left Otingo 7.30 A.M., reached summit by S.W. arête at 4.15 P.M.; returned to camp at Otingo 10 P.M. The Batum Peak is the highest point of the entire group.

August 11.—Same party started 7.30 A.M.; ascended N. pillar of main central ridge, making use of a series of couloirs and traversing W. face of rocks; finally gaining summit by S.E. rock arête, 5.25 P.M. Height about 11,650 ft.

August 15.—Same party, with addition of F. Hacker, of Vienna, left camp on high-lying pastures above Otingo at 4 A.M.; ascended, amongst others, the highest point in the centre of main ridge; called it Central Peak. Height about 11,700 ft. Returned to starting-point 9 P.M.

Excellent views of the entire range of Central Caucasus were obtained from these peaks. Their heights are given subject to correction.

ALPINE NOTES.

NEW EDITION OF STUDER'S 'UEBER EIS UND SCHNEE.'—We are very pleased to be able to announce that a new edition of this invaluable history of the Swiss Alps has been undertaken. The first bit of vol. i. (the Oberland vol.) was issued last November, and the second bit (Jungfrau, &c.) appeared early in 1896. Part 1 contains a life of Studer (with portrait), a general introduction, and the history of the Finsteraarhorn and the Aletschhorn. The old text has been preserved as far as possible, but the editors have brought it completely up to date, and have not scrupled to make many changes and additions—wisely, we think. The excellence of the revision may be easily judged from the names of the editors—Dr. H. Dübi and Herr Wäber-Lindt, the present and former editors of the 'S. A. C. Jahrbuch.' It is hoped to complete vol. i. in about four parts, the price of the volume to be 6 francs at the most. It is sincerely to be hoped that the editors may receive sufficient encouragement to take the two other volumes in hand, for it would be a pity to have only a portion of the work in its new and thoroughly satisfactory form. The publishers are Schmid, Francke, & Co., the well-known booksellers of Bern.

NEW MAPS OF THE ALPS.—We have great pleasure in announc-

ing, on the best authority, that M. Kurz's map of the Mont Blanc group* will be issued to subscribers in the early spring of 1896, perhaps in the course of March. Its publication will fill a great gap in Alpine cartography. We shall hope to speak of this fine map more in detail after its publication.

It may be convenient to point out here that with the issue of Part 45 (October 1895) of the great Siegfried map of Switzerland practically all the mountain portion of that great work is now completed. There remain only one sheet containing the hills just S. of Château d'Oex, several representing those near the head of the Lago Maggiore, and one sheet, with two small outlying bits, depicting the valley of Samnaun (the most easterly valley in Switzerland) and the group of the Gross Litzner. Some of these missing sheets are, we are informed, in the engraver's hands, and will doubtless soon make their appearance. We regret much to learn of the death (in the early part of January) of Herr Leuzinger, the most capable engraver of the Siegfried map and also of M. Kurz's map.

Attention may be drawn here to an interesting article by Professor E. Richter, whose name is well known to our readers, on the subject of an historical atlas of the Alpine districts now included within the empire of Austria. Among other points of interest, such an atlas would enable a student of the history of the Alps to see how the higher valleys were gradually colonised, and also to explain, from the names in the original documents, the meaning of those still existing, which in some cases have assumed very different forms. The essay may be found at pp. 49-65 of a volume (containing seven papers by his pupils) presented to Professor Franz von Krones on the occasion of his jubilee, November 19, 1895, and published at Graz by Leuschner & Lubensky. It would be a great boon if Swiss, French, and Italian historians would start a similar atlas for their respective bits of the Alps. Then it would become more possible than it is at present to sketch out an authentic territorial history, at least, of those districts. The materials are scattered far and wide, and are very abundant, but can only be brought together and made available for historians by the combined efforts of many workers well acquainted with the local topography, and willing to carry out their researches according to a common plan devised by some recognised authority on the intricate subject of historical geography, such as Professor Richter himself.

THE FIRST WINTER ASCENT OF THE FINSTERAARHORN.—Those who have followed the history of the winter ascents of the great peaks of the Bernese Oberland are well aware that the loftiest summit of all, the Finsteraarhorn, had not hitherto been attacked successfully at that season. Several attempts had been made, but the great cold encountered in the couloir leading up to the Agassizjoch prevented the adventurers from attaining the top of the mountain. The feat was, however, at last accomplished on January 3 last by Herr Andreas Fischer, one of the teachers at the

* See *Alpine Journal*, vol. xvii. p. 275.

Secondary School at Grindelwald, and Ulrich Almer. The following details have been very courteously communicated to us by Herr Fischer, to whom we are much indebted:—‘On January 2 we left Grindelwald at 9 A.M. and went up the Lower Glacier. The snow was very good and hard as far as the Eismeer, where we left the glacier in order to ascend by the new path to the Schwarzegg Club hut. Very soon we discovered that the snow could hardly be worse; there was much more fresh snow than we had expected, and it was bad and powdery. Fortunately we came across numerous avalanches which had fallen during the recent rains, otherwise the work would have been too much against the grain. We toiled slowly up, each most willingly giving up the “*place d’honneur*” to the other every twenty minutes. But, notwithstanding, we were rewarded for our pains, for all the walls and towers of the Schreckhorn and the Eiger were plastered over with the whitest of snow, and looked as bright and wintry as I have ever seen them. The last three hours of this first day were the worst of the whole expedition. The hut was reached at 5.30 P.M. There was no snow in it, and we spent some very pleasant hours by a good fire.

‘We started at 1 A.M. on January 3, and, keeping pretty high up on the slopes below the Strahlegg, forced our way up to the Finsteraarjoch through very deep powdery snow. But it was a walk not soon to be forgotten. There was a brilliant moon, and never did mountain scenery look grander in its bright light and the ever-changing shadows. We got up to the Finsteraarjoch at 6.30 A.M. The wall up to the Agassizjoch was very good, first good hard snow then nice rocks, but for about an hour it was cold there, much colder than in the early morning and afternoon. At 9 A.M. we were on the Agassizjoch. There it was quite warm again, no wind, and we climbed the rocks above the pass in less than an hour, and without gloves. But the next bit, up to the Hugi Sattel, was much harder work, as all the snow had been blown away, and for 1½ hr. we had to cut steps in very hard ice. The rocks from the Sattel to the summit of the peak were much better than we had expected. There was some snow on them, but no ice. The cairn was gained at 1.20 P.M., and we spent 20 min. there in the enjoyment of the most glorious winter scenery. Even the Matterhorn looked quite a snow mountain. I had taken a thermometer with me. It indicated + 14° Réaumur (64° Fahr.) in the sun, but only — 4° Réaumur (— 23° Fahr.) in the shade, and not the slightest breath of wind was to be felt.

‘We made a pretty quick descent down to the Finsteraarjoch, and had left the last crevasses behind us when night came on. During our absence the wind had been busy there, and our morning’s tracks had in part disappeared, so that we had to set to work again in the snow. The hut was gained at 8 P.M., but we had to wait till after 11 for the moon. We went down the left side of the glacier, and at 4 A.M. on January 4 were back in Grindelwald again. Let

me tell you that our success was chiefly due to Ulrich's wonderful energy and strength.'

We believe that Herr Fischer and his comrade had long planned and even tried this expedition, and we beg to offer them our most sincere congratulations on their splendid performance described in such vivid yet modest language.

OTHER WINTER ASCENTS.—The winter of 1895-6 seems to have been exceptionally favourable for the ascent of the higher peaks. Besides the Finsteraarhorn, mentioned in the preceding note, we hear of the following climbs round Grindelwald. On January 4, the Mönch was ascended by the Rev. J. Outram and Mr. F. W. Oliver, with Hans and Peter Almer, and young Ulrich Almer (Ulrich Almer's eldest son), who thus made his *début* as a climber—the ascent being repeated next day by Mr. Clayton, with the two Rudolf Kaufmanns, and on January 7, by the Rev. E. H. Kempson and Mr. C. E. Ashford, with Hans Bernet and Peter Brawand. On January 7, Messrs. Outram and Oliver, with Ulrich, Hans, and young Ulrich Almer, succeeded in making the second winter ascent of the Eiger * by a new route, of which particulars are given under 'New Expeditions.'

The 'Alpine Post' announces that on January 7 Piz Bernina was ascended by Prince Borghese, with Martin Schocher and Schnitzler. The night was spent at the Marinelli hut, the Crast' Agüzza Sattel crossed next morning, and then the usual route on the Engadine side followed to the summit, the descent being made to Pontresina. This is stated to be the second winter ascent of this peak. On February 6 Mrs. Main, with Martin Schocher and Schnitzler, made the first winter ascent of the Crast' Agüzza peak. Some difficulty was encountered in crossing the bergschrund, and on the hard ice-slope just above, but the upper rocks were quite free from snow and ice and easier than in summer. The party took 8 hrs. 20 mins. in all from the Boval hut, the ascent from the foot of the peak to the summit occupying but 1 hr. 50 mins. Even the Dolomites have not escaped invasion, for on December 4 Signor G. Garbari, of Trent, made the first winter ascent of the Cimon della Pala. The same day an English party, consisting of Mr. and Miss Wilberforce, succeeded in climbing the Zuckerhütl, the highest peak of the Stubai group. Probably other ascents have been made this winter of which no account has yet reached us.

LAUTHOR, AND DESCENT OF THE MÖNCH TO THE WENGERN ALP.—On August 10, 1895, with Christian Jossi, and Peter Bernet as porter, I started from the Roththal hut for the Lauthor at 2.10 A.M. We found snow in excellent condition after a very cold night, and went straight up the 'stone shoot' (the southernmost of the two couloirs divided by the great rock rib seen from the hut). This we found dangerous, but, with great care, quite feasible. We reached the summit of the pass at 6.40, and, having the day before us, decided to try the Mönch and descend to the Wengern Alp. We reached

* *Alpine Journal*, vol. xv. p. 78

the top of the Jungfrauoch at 8.45, and climbed the Mönch from there, reaching the summit at 12. We then descended the same way for 80 min. to where three arêtes meet, and took the N. arête. Rocks difficult, but good. The rocks ended at 1.45 P.M., and we then cut down a steep ice slope till 3 P.M., when, as the ice became steadily worse, we cut westward again and took to the rocks till 3.55. At the foot of these rocks (which are somewhat loose and, at this time of the afternoon, dangerous from falling stones) we crossed the bergschrund, 4 P.M.; then easy snow for 20 min. Then, the 'Abfall' getting steeper and steeper, we bore east, having tried the western side and found a drop of some 200 ft. After much step-cutting (one man cutting to the full length of the rope, while the two others, seated in an enormous 'Stufe,' held him) we got off on to the arête below, at 8.30. Between the end of the 'Abfall' and the arête, where the old ladder, a rickety affair, was set up, there is now a gap of several yards, and the ladder is, in descending, therefore perfectly useless. Once on the lower part of the arête, we were not long in reaching the rocks and the Guggi hut, eventually getting to our destination at 2 A.M. Times, of course, include halts.

CLAUDE A. MACDONALD.

SÜDLENZSPITZE, NADELHORN, AND ULRICHSHORN IN ONE DAY.—On August 19, 1895, Mr. E. A. Broome, with Josef M. Biener and a Saas porter, crossed these three peaks in one day from Fee for the first time. Leaving a poor gîte on the Schwarzhorn (between the Hohbalen and the foot of the Fall Glacier), at about 4 A.M., the Südlenzspitze was climbed by the E. arête and the summit reached at 11.15 (6½ hrs. actual going). The difficult rocks were iced and the whole ascent in anything but good order. From the Südlenzspitze along the snow arête to the Lenzjoch, and thence up the grand S.E. rock-ridge to the Nadelhorn occupied 2½ hrs., and the easy descent by the snow-ridge to the Windjoch and the climb up the Ulrichshorn 1¼ hr. more. The descent to Fee took 3 hrs., the village being reached by 7.30, and the whole expedition 13 hrs. actual work. This climb can be recommended as certainly affording both safer and better rock-climbing than the Dom or Täschhorn from that side. The former peak was traversed from Fee to Randa by the same party a few days later, and found dangerous by reason of falling stones.

THE AIGUILLE DE CHAMBEYRON.—In a very interesting article by Signor P. Gastaldi in the 1894 'Bollettino' of the Italian Alpine Club I find three passages of my paper on the first ascent of this fine peak badly translated (no doubt unintentionally), and an argument based on them which falls to the ground when my phrases are correctly rendered. On p. 202 of the 'Boll.,' lines 18-19, I am made to say that two couloirs on the N. face of the peak 'lead up respectively to the highest E. and W. summits.' What I really wrote* was, 'which led up the N. face to the E. and W. of the highest peak respectively.' A few lines below (lines 21

* *Alpine Journal*, vol. x. p. 131, line 18.

and 25) the same mistranslations are repeated. The importance of these slips is this: Signor Gastaldi, when preparing his article, wrote to ask me certain questions as to the peak. He quotes in a note* a sentence of my reply, from which it would appear that I had quite forgotten what I wrote in my article (and also in my original notes †). This apparent inconsistency entirely disappears when the true text of my article is restored.

In 1879 I distinguished two summits—one, the W., a lower point on the W. ridge of the Aiguille, and the other (E. summit) the culminating peak. Signor Gastaldi now wishes to call my E. peak the W. summit, because he has climbed a point, to the E. of my E. peak, which is about 20 mètres lower, and stands on the ridge between the Aiguille and the point at which the great buttress on which rises the Aiguille joins the frontier ridge at the Tête de l'Homme. It is a mere detail whether different points on the ridge should be raised to the dignity of separate summits. I christened my W. summit for the sake of topographical clearness. I am quite ready to recognise Signor Gastaldi's E. summit for the same reason, and to admit that it is a good deal higher than my W. peak. But I still hold to the words of my letter, which he quotes: 'J'avoue que votre cime E. me paraît constituer une "cime" ni plus ni moins que ma cime O. Ces pointes sont des dentelures de la crête.' It will be observed that there is no question whatsoever as to the supremacy of the point 3,400 m., first reached by me in 1879.

I may be allowed to add that Signor Gastaldi, in his summary of my climbs in the Chambeyron district,‡ has accidentally omitted three—the highest summit of the Rubren, 3,396 m., in 1879; § the Tête des Toillies, 3,179 m., in 1888; || and the Dents de Maniglia, 3,177 m., in 1890. ¶ The first-named was a first ascent, the others (as mentioned in my notes) only 'first ascents by a traveller.'

W. A. B. COOLIDGE.

THE ALLÉE BLANCHE.—The two following passages are reprinted here from a very interesting article on the 'Passes of the Duchy of Aosta in the Seventeenth Century,' by Signor L. Vaccarone, which appeared in the 'Bollettino del C. A. I.,' 1881, pp. 182 n. and 187 n. respectively. The former is specially important, from the number of local names it contains (modern equivalents given in brackets) and the use of 'arête' at an early date. The latter gives an authentic account, by an eye-witness, of one of the bergfalls, so many of which have happened without any record of them having been preserved.

In a deed of April 16, 1859, granted by Count Amadeus of Savoy to a certain John of Courmayeur the latter is given jurisdiction within the following limits:—'A molendinis de sacza [*Saxe*] prout

* *Boll.* p. 202.

† *Alpine Journal*, vol. ix. p. 350.

‡ *Boll.* p. 197.

§ *Alpine Journal*, vol. ix. pp. 348-9, vol. x. p. 130.

|| *Ibid.* vol. xiv. p. 144.

¶ *Ibid.* vol. xv. pp. 290-1.

tendit mons captivus, et gallicè mons cheyty [*Mont Chétif*] per aristam seu per crestam dicti montis usque ad somitatem de Lalays Blanchy, et ab illo loco per crestam montium usque ad sommitatem montis de ferracz [*Ferret*] prout mons de sacza tendit circumendo versus sommum dicti montis de ferraycz, et etiam prout aquae pendunt seu discurrunt et labuntur inter confines predictos a sommitatibus dictorum montium usque ad dicta molendina.'

The following passage occurs in a document preserved among the parish archives of Courmayeur:—'Dum lis ingens ventilabatur de modico terrae inter possessores montium du Triolet et d'Ameiron, mons excelsissimus et rupes et glacies dicti Triolley, nocte diei duo decimi septembri, anno 1717. subito cecidit, et saxa ejus, aquâ et glacie simul conjuncta, cum magno impetu irruerunt super dictos montes, sive alpes, ita ut coperti subtus ipsis abissis, omnia mobilia, centum et viginti boves seu vaccae, homines ad numerum septem, qui instanti perierunt, et credo quod aves qui ibi nidificabant non effugerint, et nunc videtis illos alpes et illam planam in hoc miserrimo statu, et hoc propter scelera nostra. ita attestor quia vidi. Michaël Joseph Pennard, notarius et scriba Curiae Majoris.' The name Ameyron has now quite disappeared, though the pastures of that name are mentioned in P. A. Arnod's attempt to cross the Col du Géant in 1689. The 1717 bergfall recalls, in many details, the Altels catastrophe of 1895.

As to the meaning of 'Allée Blanche,' and the derivation of the name, see M. A. Favre's 'Recherches Géologiques dans la Savoie,' iii. pp. 65-6.

THE MÄRWIGLÜCKE AND NEIGHBOURING PASSES.—The late Mr. E. F. M. Benecke took a special interest in these passes, which lie over the ridge between the Hockenhorn and the Petersgrat. In 1894 he entrusted Mr. Coolidge with his notes on this ridge, and a small sketch from the Gasterthal side. On July 11, 1895, with Mr. Cohen, he started from Ried, climbed the Birghorn and the Sackhorn, and compiled further notes on the ridge as seen from the Lötschthal side, Mr. Cohen making a sketch of the main features on it. The following list is made up from these two sets of notes, Mr. Benecke's own words having as far as possible been preserved:—

1. *Hockenhorn*, 8,297 m.
2. *False Märwiglücke*.—Across the N.E. shoulder of No. 1. An easy couloir and snow lead up to it on the Lötschthal side, a steep and narrow gully from the Gasterthal side. This is the pass crossed by MM. Montandon in 1882,* by Messrs. Godley and Cannan in 1889,† and by Mr. Benecke himself in 1893.
3. *True Märwiglücke*.—This is the lowest point in the ridge between the Hockenhorn and the Sackhorn. It is difficult of access on the Lötschthal side, the rocks being smooth and steep. Most probably it has never been crossed. Märwig is the Lötsch-

* S.A.C.J. xviii. pp. 89-94.

† *Alpine Journal*, vol. xiv. pp. 514-5.

thal name, and is adopted on the Siegfried map: Märbeegg is that used at Kandersteg, and is given in Tschudi's 'Turist' (p. 89 of the last two editions).

4. After two small humps come *three rock towers* on the ridge towards the Sackhorn. W. of these three towers the ridge is everywhere easy of access on the Lötschthal side. Eastwards it is difficult of access, generally speaking.

(a) *The most westerly of these towers* has a snow ridge leading up to the top on the Lötschthal side ('rocks some years, perhaps, easily accessible').

(b) The gap (which might be called the *W. Hohwidenlücke*) between this tower and the central tower is accessible on the Lötschthal side by a not very easy couloir.

(c) The *central rock tower* looks like a cat on the Lötschthal side. Between it and the E. rock tower is the *E. Hohwidenlücke*, reached on the Lötschthal side by a couloir, flanked by a rock rib, both very easy.

(d) Between the E. tower and the Sackhorn is the *true Sack Pass*. This is the best-looking of all these passes: on the Lötschthal side you can get easily from the glacier on to the ridge, while on the other side there is a long couloir, in 1895 filled with snow. (In 1894 Mr. Benecke had proposed the name of *Tennbachlücke* for this pass, but in 1895 preferred that of *Sack Pass*.)

5. *Sackhorn*, 3,218 m.

6. *Tennbachlücke*.—This is the pass crossed by Mr. Benecke and Mr. Cohen on August 5, 1894,* and called by them *Sack Pass*. It might take the name of *Tennbachlücke*. It is very bad on the Gasterthal side, but easy on the Lötschthal side.

7. *Point 3,216 m. of the Siegfried Map*.—This is a snow peak, and in 1894 was ascended by the party under the impression that it was the *Birghorn*.

8. *True Elwertatsch Pass*.—The Siegfried map is wrong. This seems a good pass, probably the best across the ridge. 'The *Elwertatsch* is a long easy glacier, ending in our snow slope of 1894 and shale. Stones fall everywhere on this ridge.'

9. *Birghorn*, 3,233 m.—A snow peak.

10. *Birg Pass*.—'Probably not so bad.'

11. *Pass somewhere near Point marked 3,132 m.*—'From Ried you go over the *Tellialp* to the N. foot of the *Tellispitzen* (2,925 m.). Then bear N.E. over snow, and join the ordinary route over the *Tschingel Pass* on the moraine of the *Alpetli Glacier*. This is, I believe, the way people usually go when they say they come from *Kandersteg* to *Ried* over the *Petersgrat*. Certainly it seems a more natural thing to do than to go all the way round by the true *Petersgrat*.'

THE EARLY HISTORY OF THE COL DU GÉANT.—While looking through some eighteenth-century topographical works on the frontier between France, Savoy, and Piedmont I came across two

* *Alpine Journal*, vol. xvii. p. 348.

passages which are worth noting here, as they do not seem to be mentioned by writers who have previously dealt with the history of the Col du Géant.

In the 'Mémoires Militaires sur les Frontières de la France, du Piémont, et de la Savoie' (Berlin, 1801), by M. de Bourcet, who lived from 1700 to 1780, there is the following note at p. 349 :—

'*Col de Malay. De Morges à Chamunis.*—Nota : Quelques cartes assez estimées ayant indiqué ce col, on l'a conservé, par respect pour elles, quoiqu'on n'en ait d'ailleurs aucune connaissance, et que les glaciers du Mont-Blanc rendent son existence au moins très problématique.'

Accordingly we find that this col is shown on the map appended to the book as leading from Morgex to Chamonix, and passing N. of Mont Blanc and S. of the 'Mont Malay,' which seems a general name for the N. bit of the Mont Blanc chain. This notice of the pass is especially interesting when we bear in mind that in 1689 P. A. Arnod, the bailiff of the duchy of Aosta, had failed to get across this traditional pass,* and that about 1737–1740 a letter-bearer, named Ribel, was reported to have traversed it,† the first certain and authentic passage being that by Mr. Hill, an Englishman, in 1786.

On the other hand the Col de la Seigne was traversed in very remote times, but neither of the names possibly given to it in the following extracts seems to be mentioned by Signor Vaccarone ‡ in his history of the pass. The name 'Col Major' as applied to the Seigne is particularly interesting, as it disposes of an argument sometimes alleged that the pass so called *must* be the Col du Géant, whereas no doubt it might (in accordance with a general rule) have been used of any pass leading to or from the 'Col Major' or Courmayeur (Curia Major).

In the work published under the name of Bourcet, but in a section attributed by M. de Rochas (in his edition of Montannel, p. xviii ; see below) to another French engineer, La Blotière, we read on p. 160, 'De Chapières l'on peut encore entrer dans la vallée d'Aoust en passant par Gloenier, l'Allée-Blanche, le Col Major et "Doulina," d'où l'on va à Morges.' The pass is indicated under the same name in a later section of the book (p. 349) as leading from Doulina to the Allée Blanche. It is marked accordingly on the map, an examination of which leaves no doubt on the subject, as the names mentioned above are those now written Les Chapieux, Hameau du Glacier, Dollone (opposite Courmayeur), and Morgex.

In the 'Topographie Militaire de la Frontière des Alpes, par M. de Montannel,' edited in 1875 at Grenoble by M. de Rochas, we find more particulars as to the possible identity of the 'Col Major' with the Col de la Seigne, and also a second name for it. Montannel, as his editor tells us in his preface (pp. xlvi–xlvii), wrote and retouched

* Vaccarone, *Le Vie delle Alpi Occidentali*, p. 57.

† *Alpine Journal*, vol. ix. p. 88 ; Durier's *Mont Blanc*, p. 147, note.

‡ *Op. cit.* p. 45, n. 4.

his MS. between 1753 and 1788. He is here explaining how an enemy could turn the Little St. Bernard (p. 188). 'L'ennemi peut aussi venir de la Valdost au Chapuy sans passer par le Petit Saint-Bernard. Pour cet effet, il n'a qu'à passer par l'endroit appelé l'Allée-Blanche, et par celui que l'on nomme les Glacières, et tomber de là sur le Chapuy ; mais il ne peut faire usage de cette route, à cause des neiges, que deux mois de l'année. Enfin, si l'ennemi accommodait le Col Major, qui est actuellement tout dégradé et impraticable, il pourrait venir par ce col de la Valdost dans la vallée de Fausigny ; mais ce chemin serait toujours des plus rudes, et praticable seulement deux mois de l'année, en sorte qu'il n'est guère à craindre que cet ennemi passe jamais par le Col Major dans l'objet de venir sur le Rhône en corps d'armée.' After speaking of the Great St. Bernard he continues a few lines below thus : ' Au reste le chemin qui passerait au Col Major tomberait sur Chauminis ; de là il viendrait à la Cluze, à la Roche,' &c. On p. 360 of the same work, in an enumeration of the passes from the duchy of Savoy to the valley of Aosta, the tracks over all of which meet at Fort Bard, we read of the ' Col de l'Allée-Blanche ' immediately after the Little St. Bernard. A further allusion of the same nature is to be found on p. 568. There is, however, another passage which seems (as does possibly the first one quoted above) to distinguish between the two passes. This occurs on p. 9 : ' Il y a encore, au delà de ce dernier col (le Petit Saint-Bernard), et sur l'arête même de la grande chaîne des Alpes, le Col de l'Allée Blanche et le Col Major. Ce dernier n'est plus susceptible de passage ; les pluies et la fonte des neiges l'ont rompu. Au delà du Col Major est celui du Grand Saint-Bernard.' But it matters little as regards the interest attaching to Montannel's remarks whether he means to speak of two passes or of the same under two different names.

W. A. B. COOLIDGE.

TRIAL OF A GUIDE FOR NEGLECT OF DUTY.—On p. 566 of the November Journal a brief account of the death of Herr Modl, and of the severe injuries sustained by his guide, was given. Since that time the guide, Zacchæus Gstrein, of Sölden, has been put on his trial for neglect of duty, and so contributing to the death of his employer. He was acquitted, but, as it is said to be the first time that such a trial has taken place, it may be well to summarise here the official account given in the ' Mittheilungen ' of the German and Austrian Alpine Club, 1895, p. 298. The exact charge was that Gstrein had accepted an engagement to make a difficult expedition, though he was aware that Herr Modl was imperfectly equipped for such climbs and also did not possess sufficient experience to justify him in undertaking them. Modl had no ' Steigeisen,' and wished to glissade continually, both of which points Gstrein should have noticed on their previous ascent of the Wildspitze, while the official regulations require *two* guides for that particular climb. Gstrein, who is 32 years old, and has been a guide since 1888, makes the following defence through his counsel. Modl, a strongly built, young fellow of 23 years of age, had reached Sölden over the Zuckerhüt, and though no record-breaker was yet a good walker

and a capable climber; it is too not the custom in the Oetzthal to take a second guide, perhaps 2 out of 500 tourists adopting this course. Gstrein explained that, as there was ice in a gully on the way down from the Gurgler Eisjöchl, he chose another route, over grass and stones. Modl was roped, but on a broad shelf sat down, and, against the warning given by Gstrein, began to glissade; before the guide could do more but roll the rope round his ice axe, firmly planted in the ground, Modl fell over a precipice, and dragged Gstrein with him. Modl fractured his skull and died almost at once; Gstrein was much injured, but in $\frac{1}{2}$ hr. managed to crawl to a shepherd's hut. It was also urged for the defence that though Gstrein had never been over the pass before this was not unusual in the case of a guide, as Tyrolese guides often went to unknown districts of the Alps, and even to the Caucasus; that this pass was not a difficult one, according to the 'Erschliessung der Ostalpen;' and that the use of 'Steigeisen' is not at all customary in the Oetzthal. Gstrein's counsel wound up his speech by declaring that in this case, far from the tourist having been sacrificed by his guide, it was the guide who had been nearly killed by the rashness of the tourist. The court acquitted Gstrein, as we have stated, and also relieved him from the payment of all costs, meaning thereby, no doubt, to show that no blame at all could be attached to him.

REVIEWS AND NOTICES.

A Facsimile of Christian Almer's 'Führerbuch,' 1856-94. Reproduced under the superintendence of C. D. Cunningham, and Captain W. de W. Abney, C.B., D.C.L., F.R.S. (late R.E.). With an Introduction and a Photogravure of Christian Almer. (London: Sampson Low, Marston, & Co. 1896. Two hundred copies only printed.)

THIS little volume inspired us at first sight with dire forebodings. We saw a fearful prospect before the Alpine traveller and reader. If the law makes a distinction between certificates given for professional or particular purposes and ordinary writings, and if the authors of such certificates have no control over their literary use, what a future may be in store for some of us! Every Guide's Book, every Hotel Book, every letter of recommendation furnished to a candidate for the Alpine Club, even the Candidates' Book itself—anything, in short, which can find a printer and a purchaser may become material for the enterprise of the literary—or illiterary Autolytus. All we have—in Mr. Cunningham's words—'hastily written on the evening of victory,' every casual slip in spelling or grammar, every accidental blot, may be reproduced with the terrible fidelity of Captain Abney's machine!

Such apprehensions are, it appears, unfounded. We have received the assurance of a professional authority that there is nothing in the character of such certificates as these to take them out of the class of writings over the literary use of which their authors have by English law the control.

How the law may stand is one thing. What we have to consider in these pages is rather the question of conveniency. It seems to us in accordance with common sense and good manners that writings should not be used, without their authors' assent, for purposes and in a manner other than that for which they were intended. In the present instance, doubtless, the temptation to break this general rule was considerable, and the writers of the certificates have not been seriously injured. Few even of the most pedantic critics will think the worse of Mr. W. E. Davidson for putting his name under Jungfrau without a G or of Mr. Coolidge and two other climbers for leaving out the first C in Schreckhorn. It is true that an unhappy Alpine snob, to whom even Almer's book was not sacred, has defaced one of its pages by the superfluous gloss, 'the usual spelling amongst Germans is Schreckhorn.' We cannot affect any sympathy for this specimen of a class well known to all who have ever turned over old hotel books in the punishment that has overtaken him. But the inclusion of an anonymous scribble argues either singular carelessness or a curious failure in discretion on the part of the editors. The former alternative may be supported by the evident signs afforded by the *Introduction* that its writer has not studied very closely the entries which are professedly the subject of his commentary.

We have noted several matters of detail where corrections are called for. For instance, Mr. Justice Wills's ascent of the Wetterhorn was not the first ascent of the peak (as stated on pp. viii and xvii), but the first from Grindelwald. The facts are fully given in chap. iii. of Mr. W. Longman's 'Modern Mountaineering.'* Almer's attempts on the Jungfrau in 1851,† and (with the lady who wrote as the Countess Dora d'Istria) on the Mönch in 1855, might have been referred to, though their records were probably lost in the early 'Führerbuch,' which, we believe, was accidentally destroyed by Almer's children. The famous Matterhorn accident occurred on the 14th, not on the 15th, of July, 1865 (p. xiii). To write (p. xiii) that Almer was 'from 1868 to 1874' 'during the greater portion of this long period' engaged in exploring 'the mountains of Dauphiné' is misleading, as the entries in his book show. In the first place everything south of Mont Blanc is not 'Dauphiné,' and in the next Almer spent much time in other regions besides the S.W. Alps during this period. And why should Mr. Stead be quoted (pp. xiii-xiv) for information which he apparently conveyed from a note in the 'Alpine Journal' (xiv. p. 510)? The title of Mr. A. W. Moore's privately printed journal is 'The Alps in 1864,' but on pp. xix and xxviii it is quoted as 'Mountaineering in 1864.'

On pp. xvi-xvii there is further confusion. Here is a passage which certainly, on the face of it, calls for a great deal of explanation:—

'Christian seized this opportunity of abandoning his explorations in Dauphiné with Mr. Coolidge and returned to his dear Oberland,

* *Alpine Journal*, vol. viii. Appendix.

† *Ibid.* vol. xvi. pp. 390-400.

with whose mountains he must have had so many pleasant recollections. The following year' (the last date given is January 1885) 'Almer accepted various engagements at Grindelwald, and among other expeditions he ascended the Jungfrau and reached the final *arête* of the Schreckhorn, whence, however, his party had to return, owing to bad weather. In that year (1885)' (should this be 1886?) 'Almer may be said to have taken a new lease of life and commenced, what from various points of view has proved to be a most remarkable period of his career.'

When we turn to the 'Führerbuch' we find that it shows no entry at all for 1885; in 1886 the only first-class ascents recorded—those made with M. le Comte Paul Schouvaloff and his wife—do not include either the Jungfrau or the Schreckhorn; in 1887 there is only one entry and no ascent recorded, and it is not till 1888 that we find with ascents of the Wetterhorn and Mont Blanc an ascent of the Jungfrau, and one of the Eiger frustrated by bad weather.

When we carry our researches a little further we find with astonishment that Almer, instead of having been between 1868 and 1884 mostly in Dauphiné, not only had wandered far and wide on the Alps, but had very recent 'recollections with' the great Swiss and Savoyard peaks and even with those of 'his dear Oberland.' In 1875 he had climbed the Matterhorn, Gabelhorn, Rothhorn, Weisshorn, Mönch, Eiger and Schreckhorn, Klein Schreckhorn, A. de Blaitière (twice), Mont Blanc (twice), and A. Verte; in 1880 the Wetterhorn (twice), Mittelhorn, Dossenhorn, Gspaltenhorn, Jungfrau, Finsteraarhorn, Oberaarhorn, Schreckhorn, and Mönch, and in 1884 the Finsteraarhorn, Jungfrau, Schreckhorn, Wetterhorn (twice), Eiger and Klein Viescherhorn, and Klein Schreckhorn. In the *seventeen* years referred to by Mr. Cunningham we have counted up to over two hundred recorded glacier expeditions N. and E. of the Col de la Seigne, besides many more in the Maritime, Cottian, and Graian Alps.

We are reduced to these alternatives: either Almer's 'Führerbuch' for these years is unworthy of credit, or the facts of his career have been very carelessly represented by its Editor in the *Introduction*.

The book, if published at all, should have been indexed. But in our opinion 'Führerbücher' ought not to be published, and we trust that this volume may remain an unique specimen of its class.

D. W. F.

Swiss Jahrbuch. Vol. XXX. 1894-5. (Bern: 1895.)

This is a handsome octavo volume, richly illustrated. Annexed is a case containing a panorama of Mont Blanc and other views, and it may with truth be said that no club presents its members with so handsome a volume at so small a price, the yearly subscription being only 7 fr., whilst the volume is issued to outsiders at 12 fr. The second sheet of the map of the special district (Albula) is not yet forthcoming. The finances of the club are not prosperous, since, in spite of an increased number of members (4,481), the entrance

fees and yearly subscriptions amounted only to 25,425 fr. (1,017*l.*), and they were compelled to sell capital to the amount of 14,028 fr. (561*l.*) in order to balance income and expenditure. The map is responsible for much of this, figuring for nearly 800*l.*, whilst the item 'club huts and paths' amounts to no less than 644*l.*

In the Special District (Albula group) there are separate papers from Herren Ludwig, Imhof, and Zwicky, who, however, made the tours together along with the guide Peter Mettier, of Bergün. The chief expedition not before made was the traversing of Piz Uertsch and Piz Kesch from the Albula hospice to Bergün in one day. Herr Stokar had hoped to join his friends, but was unable, and followed after with the same guide. On the Piz Uertsch (August 22) he was nearly frozen. Herr Heinzelmann, with the same guide, made the first ascent of Piz d'Aela direct from the Aela hut, with descent to Bergün. Professor H. Schiess, with two sons and a daughter, and without a guide, effected the first traverse of Piz Uertsch from the Albula hospice to Bergün. They were out from 5 A.M. on July 25 to 1 A.M. on July 26. Herr Reber describes many expeditions in the Avers valley, the chief being an ascent of the Piz della Palü (3,182 m. = 10,440 ft.), a neighbour of the Pizzo Stella.

Out of the special district Herr R. Helbling describes a number of ascents made during a stay at Fionnay (1,497 m. = 4,911 ft.), in the Val de Bagnes. These peaks are neglected by climbers, being overshadowed by their higher neighbours, the Grand Combin, &c. As the Bec Termin (3,052 m. = 10,114 ft.) had no stone-man the ascent was supposed to be new. Herr August Walker describes a number of excursions about Adelboden, including the ascent of the Tschingellochtighorn, a remarkable peak as seen edgewise in the illustration in the text. Herr A. Wäber effected the first ascent of the Altels direct from the Gasterthal. Herr Ernst Farner, along with Dr. Gassmann and Herr Paul Montandon, made a number of ascents from the Trift hut (Gadmenthal), finishing up with the ascent of the Thieralplistock (3,400 m. = 11,155 ft.). Having started very late they were benighted on the descent into the Gelmerthal, and, after encountering many difficulties, reached the huts at 2 A.M. Herr C. Seelig describes a number of excursions in the district of the Fellithal (Reussthal). In these he used the 'Climbers' Guide to the Range of the Todi,' to which he gives a proper meed of praise. The only new ascent was that of the Sonnegwichel (2,910 m. = 9,548 ft.), a mountain doubtfully identified with Piz Giuf. It lies between Piz Ner and the Crispalt, and though inferior in height to both of these is far wilder and more difficult of access. An incident occurred on this ascent which he is fortunately able to describe, but which might easily have cost him his life. Herr F. W. Sprecher, amongst other excursions from Vättis, describes an ascent of the Ringelspitz. This charming district is much neglected by English mountaineers. Professor A. Schiess, with his son, passed from Cagliari to Sassari over the Genargentù (1,870 m. = 6,135 ft.). Leaving Cagliari on Febru-

ary 28, they slept at Arizzo. On March 1 they crossed the mountain to Fonni; on March 2 to Nuoro; and on March 8 reached Macomer, the station for Sassari. The opinion generally expressed was that only the rapidity of their passage saved them from being attacked. The prospects of travelling in comfort in Sardinia seem remote.

Professor Forel sums up the results of the glacier observations of the last thirteen years. Herr R. Zeller describes the geology of the Faulhorn group; Herr P. Mettier the topography, fauna, flora, &c., of the district of Arosa. Herr P. Blumer-Zweifel discusses the vexed question of the 'Föhn,' Herr R. Eblin the degradation of the cultivable regions in the upper Alps. Herr Meyer von Knonau contributes an interesting paper on the free communes of Allgäu, at Eglöfs, near Immenstadt. They resembled those of Schwyz, and maintained their independent institutions for nearly six centuries until 1806. Herr R. Studer writes an interesting obituary notice of Pfarrer Heinrich Baumgartner, of Brienz, central president of the S.A.C., who died on November 12, 1894, at the early age of 48. He was equally zealous in Alpine and in clerical work. Most of the new expeditions have already been recorded in the 'Alpine Journal.'

J. S.

Den Norske Turistforening's Aarboj for 1895.

The well-deserved reputation of the Norsk Alpine Journal is thoroughly sustained by our northern friends by this year's issue. As usual it contains capital papers, well illustrated, and printed on excellent paper. The President of the Forening, Dr. Yngvar Nielsen, who represented his country at the recent International Geographical Conference held in London, has contributed a valuable paper on the exploration of the snowy uplands which lie between the Lyster Fjord and Skiaker, a district which deserves to be better known than it is. Our old friend Herr Hall gives another well-nigh exhaustive treatise on the Skagastölstind range, enriched by the addition of some excellent photographs, which, as is the case with the other illustrations which adorn the journal, have been exceedingly well reproduced. The glacier picture, where six heroes are battling with the bergschrund, and the view of the hut under Skagastölstind are full of interesting details.

There are papers on 'Midt Maradal;' 'New Peaks in Jotunheim,' including the middle Thorfinstind—which ought to have been climbed a dozen years ago—'The District of Rondane,' and others. The present writer contributed a paper, in English, on 'Unknown Corners of the Justedalsbræ, which is well illustrated by reproductions of photographs taken by Mr. Cyril Todd.

Amongst the 'Notiser' are valuable hints from C. Hall, C. W. Patchell, and last, but by no means least, are the details of the adventures met with by Herr E. Aanessen, on his annual tour of inspection of the various works of the 'forening,' in progress or completed, such as Alpine huts, bridges, footpaths, &c. This tour, like that of the previous year, was the work of a modern Hercules,

glaciers and unbridged rivers being about the least of the obstacles encountered by this most indefatigable secretary.

The volume shows throughout that the love of mountaineering and the knowledge of snow craft are increasing year by year in Scandinavia, and that the descendants of the vikings are thorough sportsmen, and still possess the energy and pluck of ancient days.

Turistforening for Bergen's by og stift. Aarbog, 1894-5.

As most of the finest scenery in Norway is to be found in the province of Bergen, it is not very surprising that the citizens of the ancient capital and the inhabitants of this romantic province possess a tourist club of their own. The thriving condition of this club is reflected in its 'Aarbog,' which contains several most interesting papers relating principally to mountain exploration and adventure. There are eight good illustrations and two maps. Amongst the papers is a very racy one written by a farmer in his local dialect about a new glacier pass. Herr K. Bing, the editor of the journal, who is never so happy as when above the snow line, where he frequently spends several consecutive days and nights, has contributed an excellent paper on the Aalfoten Bræ, where he climbed a remarkable aiguille,* and the Austerdals Bræ,† which, oddly enough, he explored on the same day as the present writer.

Another most useful paper is added by Herr Simonnæs, an inspector of fisheries, which contains much of general interest.

Amongst the Notes are a list of new expeditions, a short description of the Dæmmevand—the Norsk Märjelen See—and a prospective notice of the inauguration of reindeer sleighing over the Folgefond. Amongst the many new attractions invented to waylay the unwary traveller in Norway probably none will prove more fascinating than that of gaily gliding over the glacier in a sleigh. This may go on for years without any serious accident, as there are, as a rule, no visible crevasses. They are there for all that, and the danger is none the less because it is latent. Just before the inauguration, which was to be attended by a large concourse of people from Bergen, Christiania, and other parts of Norway, the present writer was rejoiced to hear that the reindeer had run away.

The 'Aarbog' is in every way a success, and is a welcome addition to contemporary Alpine literature. WM. CECIL SLINGSBY.

PROCEEDINGS OF THE ALPINE CLUB.

THE ANNUAL GENERAL MEETING was held in the Hall of the Club on Monday evening, December 16, Mr. Douglas W. Freshfield, *President*, in the chair. The following candidates were balloted for and elected members of the Club: Messrs. O. E. Bodington, L. R. Furneaux, Henri Harlé, N. A. Heywood, A. B. W. Kennedy, W. W. King, J. S. Masterman, C. N. Nicholson, H. W. Rose, and Charles Slater.

On the motion of the *PRESIDENT*, seconded by Mr. G. E. FOSTER,

* *Alpine Journal*, vol. xiv. p. 382.

† *Ibid.* vol. xvii. p. 351.

Mr. Charles Pilkington was unanimously elected President in the place of Mr. Douglas W. Freshfield, whose term of office expired.

On the motion of Mr. C. T. DENT, seconded by Mr. S. F. STILL, Dr. G. H. Savage and Mr. Frederick Gardiner were unanimously elected Vice-Presidents in the places of Sir William Martin Conway and Mr. H. Pasteur, whose term of office expired.

On the motion of Mr. C. E. MATHEWS, seconded by Mr. F. A. WALLROTH, Mr. Ellis Carr, Dr. J. Norman Collie, and Mr. T. L. Kesteven were unanimously elected new members of the Committee in place of Messrs. Alfred Williams and J. A. Luttmann-Johnson, who retired by rotation, and of Mr. A. F. Mummery.

On the motion of Mr. F. C. GROVE, seconded by Mr. F. O. SCHUSTER, the Hon. Secretary (Mr. J. H. Wicks) and other members of the Committee who were eligible—viz. Dr. W. A. Wills, Messrs. H. Woolley, H. Cockburn, G. P. Baker, and J. Heelis—were all unanimously re-elected.

The PRESIDENT announced that Sir W. M. Conway had resigned the Editorship of the 'Alpine Journal,' and stated that the Committee had appointed Mr. G. Yeld as his successor.

The PRESIDENT announced that he had sent, in the name of the Club, invitations to the foreign national Alpine Clubs, inviting their Presidents (or a delegate representing the President) to attend the Annual Meeting and Dinner of the Club, and that M. Durier, the President of the French Club, had accepted the invitation. Letters or telegrams expressing regret and congratulations to the Club had been received in response from the Swiss, Italian, and Austrian Clubs.

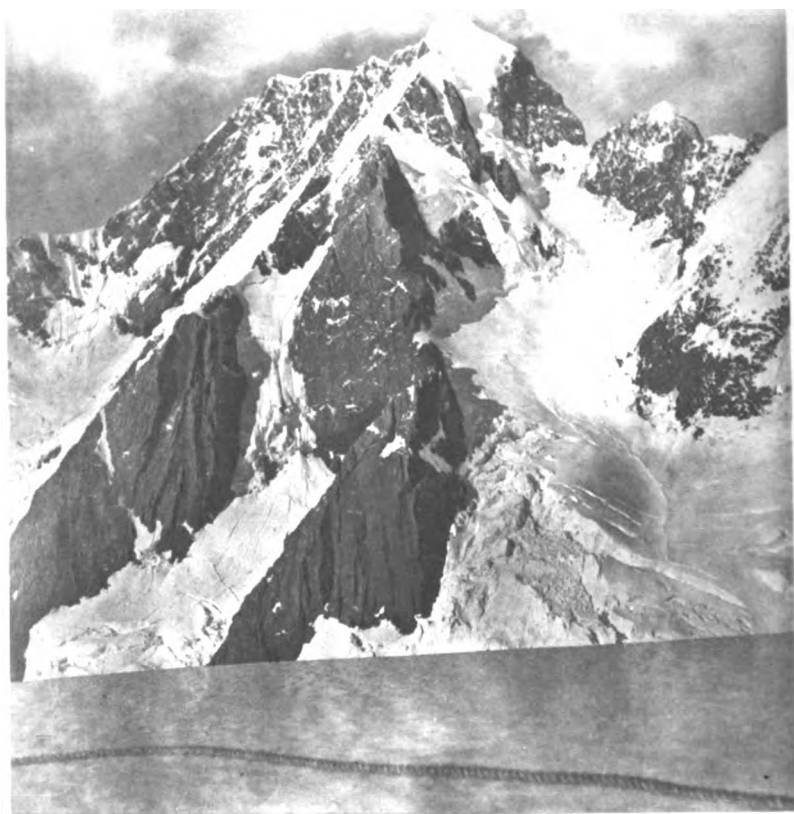
The PRESIDENT then delivered an address, in the course of which he announced that nearly 800 members had placed themselves on the higher subscription, and that he trusted that a large majority of the remaining 250 would do so, and thus enable the Club to fulfil worthily its purposes, literary as well as social. At the termination of the address a vote of thanks for it and for the President's services to the Club during his term of office was proposed by the PRESIDENT ELECT, seconded by Mr. H. WALKER, and carried unanimously.

The proceedings terminated with a vote of thanks to Sir William Conway for his services as Editor of the 'Alpine Journal,' which was proposed by Mr. W. TROTTER, seconded by Mr. J. CURTIS-LEMAN, and carried unanimously.

The ANNUAL EXHIBITION OF PAINTINGS was held in the new Hall of the Club, and was open to members and their friends from December 17 to 31.

The WINTER DINNER was held at the Whitehall Rooms on Tuesday, December 17, the chair being taken by Mr. Douglas W. Freshfield, *President* of the Club. Two hundred and seventy-nine members and guests were present, the latter including Viscount Cobham, General Sir Robert Low, K.C.B., and Sir William Broadbent. M. Charles Durier, President of the French Alpine Club and an Honorary Member of the Alpine Club, was also present.

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Mount Everest from the summit of the Col de Lachung

THE
ALPINE JOURNAL

MAY 1896.

(No. 182.)

THREE ASCENTS IN NEW ZEALAND.

By E. A. FITZ GERALD.

(Read before the Alpine Club, March 3, 1896.)

AS I am about to read to-night an account of the ascent of three peaks, I shall be obliged to plunge *in medias res* as soon as possible, for, should I spend too much time on my preamble, I should be unable to get you up to the summit of the three mountains, as I hope to do in the course of the next three-quarters of an hour. I shall not describe to-night the many failures that we had, partly owing to bad weather and partly owing to our ignorance of the country.

I will at once begin by stating that we were at what we called the Hochstetter bivouac, in a tent some 7,000 ft. above the sea level. The party with me consisted of Mattias Zurbriggen and a young fellow named Clark, 19 years old, whom I had engaged to act as porter, and who was very keen to accompany us on our ascents. It was not the first time that we had slept here in our attempts to ascend Mount Tasman, the second highest of the New Zealand Alps. On our previous attempt we had been driven back from a few feet under the summit of the Silberhorn by a howling gale.

It was early on the morning of February 5 that Zurbriggen woke us up, saying that it was already past midnight, and that we had better prepare at once for our departure. The weather was fine and the wind blowing gently from the S.W.—a favourable quarter in these latitudes.

We placed the few articles we required in one of the rucksacs, thinking that having only one pack to carry we could take it by turns, and in this way two at least of us would always be free to move quickly, and, if necessary, help the



Mount Everest from the Summit of the Sullivans
— Expedition, 1921

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We placed the few articles we required in one of the rucksacs, thinking that having only one pack to carry we could take it by turns, and in this way two at least of us would always be free to move quickly, and, if necessary, help the

third. We knew by bitter experience the value of time, owing to the uncertainty of the climate, for on previous occasions had we been a couple of hours earlier we should, no doubt, have succeeded. It was not till 2.30 that we set out. There was no moon, and at first we had to scramble over some very rough rocks, which we found unpleasant by the dim and uncertain light of our lanterns. We climbed slowly up the Hochstetter ridge till we reached a little snow-capped mound, called the Glacier Dome, at its head, and here we stood upon the brink of a great plateau. Mount Tasman rose up some 4,000 ft. above us, and on the right lay Mounts Lendenfeldt and Haast, and to our left Mount Cook, only two of its three peaks being visible from here. We cut across this snow basin, making straight for the actual peak of Mount Tasman. When we reached the foot of the mountain we turned to the left and made our way through some great crevasses, in order to gain a small group of rocks situated at the base of the south arête. The whole ascent of this mountain lies across ice and snow, and these few little rocks are isolated in the wide expanse of névé. No actual difficulty presented itself to prevent our getting through this ice-fall, but it required care, more especially as there was not yet sufficient light to see clearly, though we had extinguished our lanterns, finding them useless in the dim twilight. Up to now we had pressed forward as fast as possible, so as to regain some of the time we had wasted before our departure. We reached these small rocks at 5.40, and made a short halt to adjust our crampons, while Zurbriggen screwed some long nails into Clark's boots. From this point a steep and sharp ice arête rises, with few interruptions, to the very summit of the Silberhorn.

The sun had just risen far out beyond the hills of Canterbury, lighting up with its first glow the crest of Mount Cook, which towered above us in the form of a sharp snow-cap. Little by little the summit of Tasman shone forth in the morning light, the dazzling white purity of its snow marking it pre-eminently in contrast with the surrounding peaks, while all about its sides hung huge glaciers broken into wild fantastic shapes by reason of the steep angle at which they were suspended.

About 6 o'clock we started to scale the snow arête towards the Silberhorn. As the ridge was not very steep just here, Zurbriggen found it more expedient to keep to the crest. Our crampons were sufficient to hold us up without the aid of step-cutting, and we progressed rapidly. Clark, however,

Scale

2 3

A SKETCH MAP
 to illustrate
 FIRST CROSSING OF
 THE ALPS OF NEW ZEALAND
 E. A. FITZ GERALD



As shown thus _____
 above the Sea.

Stanford's Geographical Establishment.

had some difficulty in keeping pace with us, as the nails in his boots were far from equal to our crampons, while the leather was so bad that he could not for one moment depend upon its not splitting. He got on very well, though, taking into consideration how handicapped he was; while Zurbriggen and I, thanks to our crampons, were so solidly placed that we were able more or less to draw him up behind us when he slipped.

We soon reached a spot where we were obliged to turn some big crevasses that intersect the arête. We found some difficulty here, but after a little time and patience we succeeded in threading our way through these, and at last started on the final arête up the Silberhorn. It was excessively steep here and we had to cut steps. Zurbriggen went first and cut small notches, which I enlarged as I followed, having in view the possibilities of bad weather on the descent, for if the wind should rise to a gale we should be very dependent on these for firm footholds.

We were now on the western side of the arête, with the Linda Glacier directly below us. We progressed slowly towards the summit, which appeared close to us from here, but, as the snow was hard, our ascent was necessarily prolonged.

At 10.30 we reached the top of the Silberhorn. The weather, which had been fine until now, commenced to assume a more threatening aspect, and filmy clouds were hurrying towards us from the N.W., from which quarter our bad weather usually came, and the wind was rapidly increasing to a gale; in fact, it looked so threatening that we seriously debated as to whether it would not be more prudent to turn back. After a short consultation, however, we decided to continue. From here Mount Tasman rises up about a thousand feet, a sharp ice arête leading to it. We started at once and soon got to where this ridge starts from the Silberhorn. We had some trouble in getting on to it, as it was cut away close to the bergschrund.

Zurbriggen was delayed some 20 min. by this obstacle, as he had to cut very deep steps, more especially as the wind now commenced to blow with great force. We had put Clark in the middle, so that in case he should slip we could hold him between us. Zurbriggen was working in magnificent style, and rapidly cut his way up the final arête. We were now completely enveloped in mist, so dense that at times I could scarcely see him, and I was excessively surprised when suddenly I heard him call out that he was on the summit.

In a few seconds I stood beside him on the peak of Tasman. It is in the shape of a small plateau some ten yards square, where one could have pitched a couple of good tents if one had wished to. I was surprised at this, for from the nature of the mountain we had expected a conical point of ice. The weather was so bad that we were obliged to turn at once and descend as quickly as possible. I came first, Clark followed, and Zurbriggen brought up the rear as anchor to the party. I soon found it was necessary to hollow out the steps which Zurbriggen had cut, as they were filled with fresh snow, which was rapidly drifting into them. We succeeded in reaching the Silberhorn without accident, the arête until now having been sheltered from the wind to some extent.

We saw that the rest of our way would be far more exposed, and the weather was getting worse and worse. We commenced the final descent at once, and proceeded without incident till we reached the first crevasse which intersects the arête. Here it was necessary to cross over to the eastern side, where we had come up that morning, and had cut steps round this corner. I crossed over, and made Clark follow as close to me as possible, for there was a crevasse to pass, and I wished to keep the rope free, as I intended to jump. I advanced one step, therefore, on the solid ice, and, as the small bridge which spanned the crevasse seemed very frail, though we had passed it without accident in the morning, I prepared to jump across rather than trust myself to it. All went well up to the moment I jumped, when Clark unfortunately twitched the rope, landing me in the centre of this bridge, and the next moment I heard an ominous crack. It held for a second, but I knew that it must give. I had barely time to shout to warn Zurbriggen, who was on the corner of the arête, when it gave way beneath me with a tremendous crash. I fell about 10 ft., and the rope tightened around me; some large blocks of ice fell with me, and as I was suddenly jerked up by the rope they struck me on the head and shoulders, and I thought I should be suffocated by the strain of the rope round my chest. I managed, however, to keep hold of the ice axe, and after a few moments regained my senses and felt that the rope was being held tightly from above. I at once wedged my back against one side of the ice, and pushed with my feet against the opposite wall of the crevasse to steady myself. I then cut two notches, one on each side, so that I could stand in them, thus easing the strain on the rope; and, as the crevasse was narrow, I contrived to work my way up a little higher to where there was a ledge. Here I untied

myself, for I knew that Zurbriggen and Clark were too badly situated to help me out. Moreover, as I had broken down the side walls of the crevasse, I knew they must make a *détour* themselves to get round. I extricated myself without serious difficulty, and they soon joined me. The weather had now grown decidedly worse, and the rest of the descent had to be accomplished in the teeth of a howling gale. We recrossed the snow plateau and reached our tent at about six in the evening. The storm had moderated, and the sun shone through the clouds at moments.

We turned in at once, being greatly fatigued, and thus ended our ascent of the Silberhorn and Mount Tasman.

The next day I sent Zurbriggen and Clark down to the Ball Hut, a small building constructed by the Government, some way up the Tasman valley, for the use of travellers exploring these ranges, with instructions to bring up fresh provisions next morning. I spent the rest of the day in straightening out our effects at the camp and in drying our clothes, which had been soaked through on the previous day's ascent. With night a terrible thunderstorm came on, and raged with such fury that I feared the whole tent would be blown away. I was obliged to go out in the middle of the night and secure it with an extra rope. As the storm gradually passed away a great fall of rocks occurred in the couloir near which the tent was situated, but, thanks to the overhanging rock under which we had pitched our camp, none of these stones struck it.

In the evening of the following day Zurbriggen and Clark turned up with fresh provisions. The weather was now fine again, though very cold. We turned in early, intending to make an attack upon Mount Haidinger next day. Towards midnight we again began making preparations for the start. We took with us rather more equipment than usual, as we foresaw the possibility of being obliged to spend the night between Haast and Haidinger. About 2.15 we started, following the same route as before, up to Glacier Dome. This we reached about 3.20. We then turned to the right, and skirted along the edge of the plateau, looking for a good couloir to take us up to the *arête* leading to Haast. We tried one, but were unsuccessful in gaining the ridge, so were obliged to retrace our steps to Glacier Dome, and thence to follow the *arête* from the beginning. This ruffled Zurbriggen very much indeed, and he muttered all along as we were turning back that never again would he try a short cut. This ridge leading to Haast we found in a very bad

condition, the rocks all crumbling away as we touched them.

At daybreak we made a short halt for breakfast. From here we continued on towards the peak of Haast till we got within about 1,000 ft. of the summit. Zurbriggen now branched off to the right, and we traversed the face of the mountain as quickly as we could, for the sun had already risen, and small avalanches of snow were commencing to fall down the sides. We finally reached a point near the edge of the snow whence we could see the arête that leads from the head of the Freshfield Glacier to the summit of Haidinger. Our mountain looked very far off, and we scarcely hoped that we should be able to reach it in time to return that day, but, as the weather was all that could be desired, we determined to push on. We were now obliged to cross a slope of snow that was constantly swept by avalanches. Zurbriggen led, cutting a few steps now and again, but for the most part trusting himself to the soft snow, while I followed behind and Clark brought up the rear. Clark, being unused to this sort of work, slipped and fell and dragged on the rope continually. This was rather alarming, for I feared lest he should drag me down too, as we had no steps to hold on to. But Zurbriggen was so absorbed in watching the dangers from above that he did not notice these misadventures behind, but hurried on fast. A large stone whizzed past us only a few paces in front of me. From time to time he would have to stop and cut a few steps across a patch of clear ice that had been laid bare by some unusually large boulder sweeping over it. At last, after about twenty-five minutes, we reached the snow slope under the col between Haast and Haidinger, and sat down in comparative safety to recover from the rapid action that had just taken place. We left our rucksac here, taking with us only the few provisions we thought absolutely necessary for the ascent.

A great bergschrund here blocks the way, and over this we had to pass. Zurbriggen plunged his ice axe into the wall horizontally, and then took Clark's and fixed it in a similar position higher up; then, holding the ends of these two axes, he intimated that I should find this an excellent ladder. I crawled up on to one of them, and steadied myself by leaning on Zurbriggen; then very carefully I managed to get on to the top one, and with the little help that I got by putting my foot upon Zurbriggen's head, to steady myself, I planted my own axe firmly into the soft snow above me. I now heard several remarks below as to how long I should be in

getting up. These were followed by some hasty words in *patois* that I did not fully comprehend, and then for the first time I perceived that Zurbriggen was not happy. The idea flashed across my mind that it must be my crampons on his head, and at the same time I remembered that he had carefully sharpened them a few days previously at the Hermitage. I managed at once to draw myself up on to the slope above me, while Zurbriggen, as soon as my boot was removed from his head, shoved me up from below with his ice axe. I cut a few steps, and going up 2 or 3 ft. made myself a platform on the snow, and then hauled up young Clark. We next embedded our two ice axes deeply in the snow, and attaching the rope to them succeeded in helping Zurbriggen up. He muttered something to the effect that the next time he climbed with me he was going to have an iron helmet.

From here we soon gained the arête that leads direct to Haidinger. This was really the first opportunity we had had of seeing the country that lay out towards the sea, the country of Westland, as it is called. After the dull brown tracts of snow grass of the Mackenzie country and the rugged rocks and glaciers of the Alps of Canterbury, the bright green of the West Coast valleys and the fertile plains beyond were indeed a refreshing sight. Beyond lay the sea, covered with small cumulus clouds, gleaming in the sunlight like some vast desert of sand as far as the horizon. Beneath our feet lay the great névé of the Fox Glacier, which flows down almost to the very coast, while to our right Haidinger rose up majestically, with great ice precipices on every side and a long ice arête leading up to the summit, broken here and there with rocks.

We found this arête easier to progress along than we had expected, and at 10.30 we stood upon the summit of the peak. The day was perfect and the view superb, and I secured excellent photographs of the surrounding ridges. We spent over 2 hrs. upon this peak, and it was not until about 1 o'clock that we commenced our descent.

We reached Glacier Dome that evening a little after 6 o'clock, but I have not time to-night to describe the incidents that occurred in our descent, as I wish to pass on to the account of our ascent of Mount Sefton, by far the most difficult and important climb that we had in this country. I will not enumerate our several failures in this undertaking, but merely state that when we left the Hermitage, upon February 13, for the bivouac from which we proposed to attack Mount Sefton it was our seventh attempt

to scale this mountain, for upon six previous occasions we had been driven back by bad weather.

An overhanging rock near the Footstool constituted the bivouac where we had usually spent the night, and we reached this shelter at about 6.30 in the evening. The night was fine, and we felt confident that the time must at last have come when we should be able to force our way to the summit, and that after six weeks of hopeless weather our perseverance must meet with its reward. The coming day offered a grim prospect. It was after broken sleep and a nightmare vision of again and again scaling and slipping down the ghastly crags that I awoke about midnight to prepare for the start. We spoke little, awed by the stillness and the weird moonlight, and the sense of all that lay before us. Our blood was chilled, and as we drew on our cold boots (there is nothing equal to drawing on cold boots to check your ardour and give a general sense of helplessness down to the tips of your numb fingers) I am sure that Zurbriggen felt the intense excitement of the hour not less than I did myself. We made some tea at 12.45, put on our crampons, and roped ourselves, for the crevasses commence immediately on leaving the bivouac.

When we started the moon had been up about an hour, and Sefton loomed over us in a wild array of pinnacle and precipice like some fantastic Gothic vision with glittering icefalls suspended at unnatural angles in the bright moonlight. Now and again the stillness of the night was broken by a sharp rattle of stones from the summit, clear and piercing as the reports of musketry, dislodging solid masses of ice and snow on their downward path with a rattle as of thunder peals, and next with a fearful crash they would lose themselves in the Mueller Glacier, 8,000 ft. below, while the crags around re-echoed to the roar like the vaults of some vast cathedral. Our way lay up towards the face of the Footstool, and we had to mount a steep ice slope, while at every step we heard our ice axes and crampons ring on the crisp ice. A dark shadow was thrown from the Footstool, in front of us, across the sheer face of Sefton till the grim peak seemed to frown with sinister meaning on us who dared thus to break the eternal silence of its primeval solitude.

All this time our nerves were kept strung to the highest pitch by the ceaseless vigilance that we had to exercise, from the fact that there were only two of us on the rope and that the glacier was in a frightful condition, owing to the lateness of the season, corresponding to the September of the Northern

Hemisphere. The weird shadows cast by the dim light of the moon seemed to enhance the horror of the tottering séracs and perilous crevasses among which we threaded our hazardous way. Upon reaching the rocks at the base of the Footstool we turned to the left, and, crossing the Huddleston Glacier, plunged into the great icefall that comes down from Tuckett's Col. At first we had to thread our way through a pile of débris from former ice avalanches, glancing anxiously up the while in the half-expectancy that some of the pinnacles that seemed almost to totter overhead might fall and overwhelm us. Zurbriggen here displayed an unerring knowledge of ice-craft and glacier work, that enabled him to thread his way in the uncertain light of the moon through what appeared, at first sight, to be an inextricable maze of crevasses. The greatest caution was required in crossing the frail ice bridges that spanned crevasses gaping beneath our feet into measureless depths, to judge from the echoes of the icicles that fell as we passed.

Finding that we could not force our way up from the glacier, on account of the great crevasses that cut us off completely, we were obliged to take to the rocks on the left. We had some difficulty in mounting these rocks, as the glacier fell away from them, and great chasms had to be crossed upon seemingly fragile ice bridges. Once on these rocks we thought ourselves better off, but had not progressed more than a few feet before we found that they were in such a crumbling condition that even the glacier, with its great séracs and blocks of ice, would almost have been preferable. The slightest touch would at times dislodge masses of loose stone, and we had to use the utmost precaution to avoid undermining the rocks overhead by starting such small avalanches. We continued on this arête as far as a short slope of ice situated between the last rocks of the Huddleston Glacier and Tuckett's Col. Here we stopped to put on the crampons, which we had taken off while mounting the rock arête, and, thanks to their assistance, we succeeded in reaching the top of this, the last snow arête, just as the dawn was breaking. Without these excellent adjuncts we should in all probability have spent several hours in cutting steps, and should undoubtedly have been compelled to pass the night out on the mountain in our descent, for, as it was, we only just got clear as evening closed in upon us.

By 6.30 we stood upon the saddle between Sefton and the Footstool, which we had named Tuckett's Saddle. Day was breaking, and a cold wind had sprung up from the S.W.

We looked straight down some 5,000 ft. into the wooded valley of Copland, leading into the Karangarua, and out beyond to the Pacific Ocean, still veiled by filmy vapours. Behind us, across the Hooker Valley, rose the three giant peaks of Mount Cook, still shrouded in morning mists, with the exception of the topmost ice-cap, which was already suffused by the glow of sunrise; while far off to our left lay the barren plains of the Mackenzie country, which presented a strange contrast to the green, fertile valleys of the West Coast, with their semi-tropical vegetation.

From this point the great mass of Sefton towered above us at what seemed to us at that time almost hopelessly steep angles. The precipice that leads down from here to the Copland is by far steeper than any I have ever seen in Switzerland, and, indeed, appears almost perpendicular. We paused for a few moments to rest, as we had scarcely stopped since we left the bivouac. We left our rucksac, and in fact everything that we could dispense with, so that for our final struggle we might be in the lightest marching order. Zurbruggen insisted upon my carrying in my pouch a bottle of claret he had brought from the Hermitage, 'for,' he assured me, 'when I have the peak in my pocket we shall wish to drink to its health, and at the same time I will smoke half a cigar in honour of the occasion.' These were the first words that we had uttered since leaving the bivouac, for our moonlight journey across the glaciers had not been conducive to genial conversation. He pointed out to me, moreover, that an empty bottle would be necessary to put our cards in when we reached the summit, for without this it would really be no ascent at all, nor would it count as recorded in the annals of the Alpine Club. We slightly lengthened the rope between us, and Zurbruggen started, first traversing a bit of rock arête that leads to the face of the great cliff we intended scaling. This ridge was as rotten as it could well be, and the stones literally crumbled away beneath our feet at each step. Crawling along the very crest, we soon discovered that it was so thin as to form a veritable 'knife-edge,' while it actually seemed to incline over towards the Copland side. I could feel the whole mass tremble under each of Zurbruggen's steps, and it was an intense relief to us both when at last we exchanged what seemed uncommonly like an experiment in tight-rope walking for apparently more solid foothold. I use the term 'solid' comparatively, for I have no doubt that reasonable objections may be raised as to the actual solidity of any part of this mountain. Here the

nature of the rock changed, and instead of merely crumbling stones we were confronted by large boulders, which at first appeared to be solidly embedded in the mountain-side, but, as we soon found, were in reality so delicately poised as frequently to give way when touched. Soon we were climbing cautiously up an almost vertical face of loose rock, to which we clung like flies, testing each stone carefully with our hands before trusting our weight to it.

Zurbriggen had the more responsible task, for unavoidably my position was vertically below him at every step, and even a small stone falling from under his feet would have seriously injured me. How he managed this perilous task will always be a wonder to me, and a finer display of mountain craft and rock-climbing than he exhibited on this occasion is scarcely conceivable.

After about an hour of this arduous work on the Copland side of the mountain we at last came to a place where the side of the arête facing the Hermitage proved to be slightly less steep; crossing over to this, we were able to make somewhat more rapid progress.

Directly in front of us now rose what we had always supposed, when looking at it from the Hermitage, to be the worst bit; from our present position it seemed, if possible, even more appalling. The actual rock, indeed, was better in some respects, and rather less crumbly than what we had just traversed, but, on the other hand, there were many huge blocks of stone which would give way if the slightest weight came upon them. We kept, as far as possible, to those rocks that seemed most coated with ice, in the hope that they would be bound together by the frost, and thus afford a more secure foothold, though by so doing the difficulties of climbing were doubled.

After advancing in this way a few steps we found ourselves again forced to return to the crest of the arête, along which we proceeded between two precipices, descending to the Copland and to the Mueller valleys—some 6,000 ft. sheer drop on either hand.

We had next to climb about 300 ft. of almost perpendicular cliff. The rocks were peculiarly insecure, and we were obliged to move by turns, wherever possible throwing down such rocks as seemed most dangerous. At times even this resource was denied us, so dangerous was the violent concussion with which these falling masses would shake the ridge to which we clung. I carried both the ice axes, so as to leave Zurbriggen both hands free to test each rock as he slowly worked

his way upwards, while I did my utmost to avoid being in a position vertically beneath him.

Suddenly, as I was coming up a steep bit, while Zurbriggen waited for me a few steps above, a large boulder, which I touched with my right hand, gave way with a crash and fell, striking my chest. I had been just on the point of passing up the two ice axes to Zurbriggen, that he might place them in a cleft of rock a little higher up, and thus leave me both hands free for my climb. He was in the act of stooping and stretching out his arms to take them from my uplifted left hand, and the slack rope between us lay coiled at his feet. The falling boulder hurled me down head foremost, and I fell about 8 ft., turning a complete somersault in the air. Suddenly I felt the rope jerk, and I struck against the side of the mountain with great force. I feared I should be stunned and drop the two ice axes, and I knew that on these our lives depended. Without them we should never have succeeded in getting down the glacier, through all the intricate ice-fall.

After the rope had jerked me up I felt it again slip and give way, and I came down slowly for a couple of yards. I took this to mean that Zurbriggen was being wrenched from his foothold, and I was just contemplating how I should feel dashing down the 6,000 ft. below, and wondering vaguely how many times I should strike the rocks on the way. I saw the block that I had dislodged going down in huge bounds; it struck the side three or four times, and then, taking an enormous plunge of about 2,000 ft., embedded itself in the glacier now called the Tuckett Glacier.

I felt the rope stop and pull me up short. I called out to Zurbriggen and asked him if he was solidly placed. I was now swinging in the air like a pendulum, with my back to the mountain, scarcely touching the rock face. It would have required a great effort to turn round and grasp the rock, and I was afraid the strain which would thus necessarily be placed on the rope might dislodge Zurbriggen. His first fear was that I had been half killed, for he saw the rock fall almost on top of me; but, as a matter of fact, after striking my chest it had glanced off to the right and passed under my right arm; it had started from a point so very near to me that it had not time to gain sufficient impetus to strike me with great force. Zurbriggen's first words were, 'Are you very much hurt?' I answered, 'No,' and again I asked him whether he was firmly placed. 'No,' he replied; 'I am very badly situated here. Turn round as soon as you

can ; I cannot hold you much longer.' I gave a kick at the rocks with one foot, and with a great effort managed to swing myself round.

Luckily there was a ledge near me, and so, getting some handhold, I was soon able to ease the strain on the rope. A few moments later I struggled a little way up, and at last handed to Zurbriggen the ice axes, which I had managed to keep hold of throughout my fall. In fact, my thoughts had been centred on them during the whole of the time. We were in too bad a place to stop to speak to one another ; but Zurbriggen, climbing up a bit further, got himself into a firm position, and I scrambled up after him, so that in about 10 min. we had passed this steep bit.

We now sat for a moment to recover ourselves, for our nerves had been badly shaken by what had so nearly proved a fatal accident. At the time everything happened so rapidly that we had not thought much of it, more especially as we knew that we needed to keep our nerve and take immediate action ; but once it was all over we both felt the effects, and sat for about half an hour before we could even move again. I learned that Zurbriggen, the moment I fell, had snatched up the coil of rope which lay at his feet, and had luckily succeeded in getting hold of the right end first, so that he was soon able to bring me nearly to rest ; but the pull upon him was so great, and he was so badly placed, that he had to let the rope slip through his fingers, removing all the skin, in order to ease the strain while he braced himself in a better position, from which he was able finally to stop me. He told me that had I not been able to turn and grasp the rocks he must inevitably have been dragged from his foothold, as the ledge upon which he stood was literally crumbling away beneath his feet. We discovered that two strands of the rope had been cut through by the falling rock, so that I had been suspended in mid-air by one single strand. The rope, however, was an excellent one, made by Buckingham, and held through this severe test.

I was considerably hurt by the stone, for it made a cut in my side, which bled a good deal and did not heal for a couple of weeks. We determined nevertheless to finish the ascent. There was yet another bad place a few steps further on, but this we succeeded in scaling without serious difficulty.

When we got to the top of this we saw that it would be possible to cross the face and get on to some rocks on the Copland side that led straight to the summit. The face here was snow, and we had to cross diagonally to get to the rock.

We found this slope in very bad condition, besides which it was raked with falling stones. On reaching the point where we intended to take to the rocks again we had some difficulty in reaching them. They were quite smooth and went up perpendicularly for some distance. I got on to Zurbriggen's shoulders (he suggested, by the way, that he should get on mine, but I preferred the other method), then taking the ice axe he shoved me up as high as he could, and here after a good deal of stretching and wriggling I contrived to get handhold and draw myself up to the ledge. Here I made myself firm, and putting the rope round a projecting rock Zurbriggen climbed up by it. We gained the arête from here in about 20 min. The last bit before reaching the peak is comparatively flat, and I walked along it without any difficulty. On the one side we looked down to the Hermitage, and on the other straight into the Copland. As I learned afterwards, we were plainly visible against the sky-line to those who were looking at us through a telescope from the Hermitage. At 10.25 we stood upon the actual summit, which is in the form of an ice cone. Here I planted my ice axe. They say that they saw this from below. I tied to it a red rag which we had brought with us for the purpose—a bit of the inside of an old macintosh lined with red. We then went down a little way on the Copland side, to escape the cutting wind, and drank our bottle of claret, while Zurbriggen smoked his accustomed half-cigar.

At 11.40 we commenced the descent. I came first and Zurbriggen brought up the rear. We proceeded without incident to the place where the first dip commences. Here we drove one of the iron staples firmly into the rock; then taking the thin rope and tying it round myself, I came down the whole length of it, about 150 feet. I then untied myself and got out of the probable line of descent of such stones as Zurbriggen might dislodge when he came. He passed the rope through the ring, and came down holding it double in his hand. When he came to the end of it he let go one end of the rope and drew it all down after him. We repeated this operation at the steep place where we had had our accident coming up. This time we got down quite safely, and at 2.20 we again stood on the col between Sefton and the Footstool. Here we ate a few biscuits, and after I had taken some photographs we put on our crampons and came down the snow arête. We were now in great difficulty, for the snow that covered the ice was quite soft. All the way down I had to cut steps through this soft snow well into the hard ice underneath.

Our crampons were of very little use, for snowballs formed in them, which we had to cut out with the points of our ice axes. By 5 o'clock we at last reached the rocks, down which we hastened, as there was very little light left, and crossed them without incident as far as the glacier; the sun had heated the snow during the day, and it was extremely soft, so that the ice bridges we had come over safely in the morning now proved a serious danger and obstacle. We had to make innumerable détours among the séracs.

We were at last able to get out of this labyrinth and into a clear part of the glacier, which was comparatively safe but for the danger of hidden crevasses in such soft snow. One very large crevasse ran almost the whole length of the glacier, crossed apparently by one ice bridge only. In the morning we had come over it safely, but now that everything had been melting and dripping fast all day it looked rather unstable. We had to approach it down a very steep slope of soft snow, and I did not like the look of it at all. Zurbriggen led, as he had done since we had come upon the glacier, and he was just in the act of putting his foot upon the bridge when down it went with a thundering crash, the sound reverberating under our feet till the actual bit we stood on seemed to tremble. Zurbriggen had only just time to leap back and to call to me to draw in the rope. Before he had stepped on to the ice bridge I had planted my axe firmly into the deep snow, but now the sudden idea that the very slope that we were on was about to yield entered both our minds simultaneously, and we turned and hurried back, never once stopping till we had put a safe distance between us and the brink. We were barely clear when, with a loud booming sound, a second piece of ice detached itself and fell headlong into the abyss beneath.

We now walked along the glacier a few steps, so as to get a good view of the small remains of what we had supposed to be the last bridge left across this crevasse. Both lips of the chasm overhung greatly, and there was just a small bit of snow across it which looked ready to give way under the least weight. Zurbriggen was very keen to try this at once, but I refused until I had quite made up my mind that it was absolutely our last resort, and even then I pointed out to him that we should stand a better chance by waiting till the cold night air had frozen the soft snow together, and thus bound the fragile thing into a more compact mass. We walked along the edge of the crevasse for a long distance—in fact, nearly as far as the Tuckett Glacier. The shades of evening were now fast falling, and the prospect of a night on the

glacier stared us in the face. At some little distance from where we stood there seemed to be another sort of bridge, which Zurbriggen, in his eagerness to get away before night overtook us, wished to try; this time I yielded, trusting to his great knowledge and experience of ice work. I planted myself in a firm position, and, burying my ice axe in the snow, made ready to do my best to hold him up should an accident occur. He crawled as lightly as a cat over the frail ice that joined the two sides of the chasm, when suddenly, to my alarm, I found that the rope between us had come to an end, making it necessary for me to follow him at once, so that he should not be obliged to pause one single instant in the perilous position in which he was now placed. I went quickly after him, and thus we both found ourselves upon this bridge at once. In an instant, however, Zurbriggen had gained the opposite bank, plunged his axe into the snow, and calling out to me to be careful, drew in the rope, assuring me that he could hold me up should the ice give. Luckily I was not obliged to make trial of his strength, and a few minutes later we were hurrying through the last crevasses and séracs of the Huddleston Glacier.

I could already hear the voice of young Clark calling to us from the bivouac, and in about three-quarters of an hour we had joined him and were partaking of some hot tea which he had prepared for us. I decided to go down to the Hermitage that night, but Zurbriggen said he was too tired to move a step further and lay down in the rock bivouac to sleep. I left him ensconced in both sleeping-bags and started down with Clark to find my way to the Hermitage with the help of a lantern. Shortly after midnight I arrived, having been nearly 24 hours on the march.

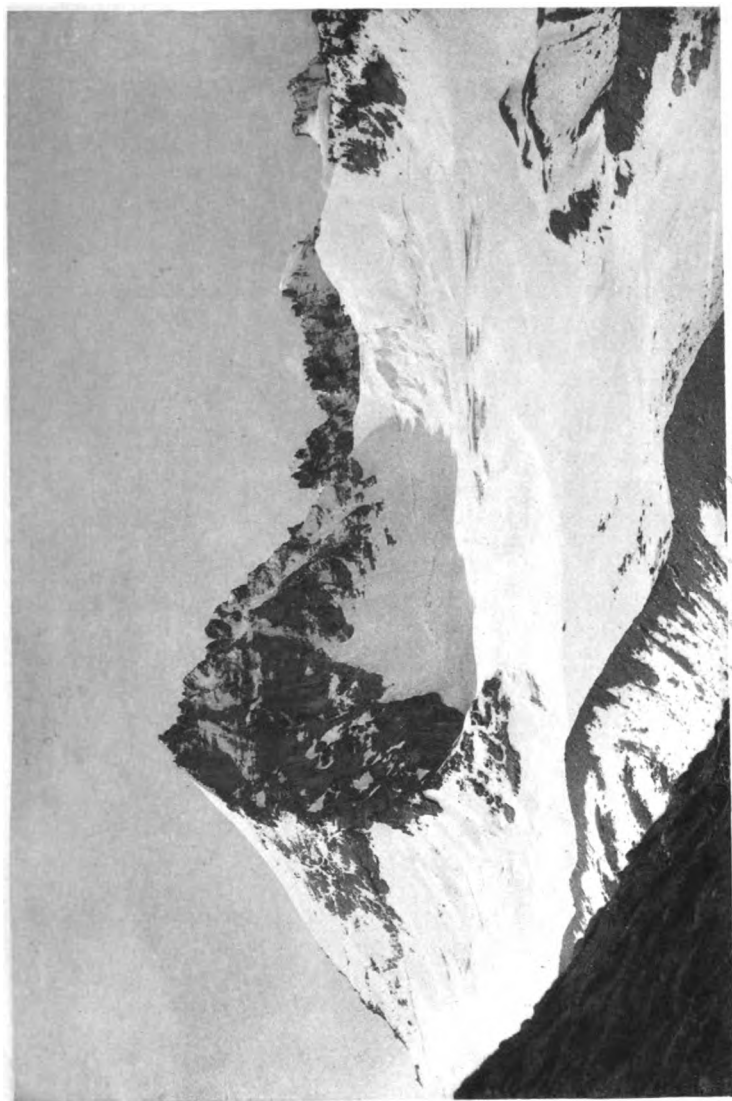
MONT HERBETET AND ITS SOUTHERN RIDGE.

By F. W. OLIVER.

(Read before the Alpine Club, April 14, 1896.)

I THINK it must have been in 1893, from the summit of Les Ecrins, that I first cast longing eyes on the mountains of Cogne. Their white peaks and blue recesses, seen through a gauzy veil of mist in the hot August sunshine, formed a picture of rare beauty, and it aroused in me the determination to visit and explore the district at the earliest possible opportunity; and, as this frame of mind endured through the winter, it was with much satisfaction that I





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received word from Hiatt Baker early the following spring that he could meet me at Cogne in August, and that he was bringing Alexander Burgener with him.

Arrived at Cogne we began at once to revel in the glorious Italian scenery and to climb the mountains. Nor had we been a week in the country before chance led us to the Herbetet. As yet it was to us but a geographical expression; in neither of our preceding expeditions had we caught a glimpse of it. But we wished for something of moderate dimensions which we might combine with a passage to Valsavaranche, and then to return to Cogne over the Grivola. And for this Mont Herbetet seemed admirably adapted, standing as it does between the Cols Bonney and Herbetet, the two chief mountaineering passes between the valleys of Cogne and Valsavaranche. Accordingly a hot and sunny afternoon saw us trudging up the King's Hunting Path to the Herbetet hut, conveniently placed on the western slopes of the Valnontey. Its tenants, two of the King's keepers, entertained us with much hospitality, and insisted that we should occupy their beds, whilst they wooed Morpheus on the floor.

By daybreak we were already on the Herbetet Glacier, with the northern and eastern ridges of the mountain well in view. Our intention was to gain first the S. Col de l'Herbetet, there leave the impedimenta, and climb the peak by its northern ridge. But the eastern arête lay invitingly to our left; and had not Ulrich Almer compared it to the Zermatt ridge of the Rothhorn? And besides, the north arête, being partly of snow, meant steps to cut, for the 'snow' of the 'Climbers' Guide' is always ice in Italy. No wonder, then, when Baker suggested we should take the eastern ridge, on account of its superior attractions from a gymnastic point of view, the guides concurred with enthusiasm. Nor were we disappointed. Throughout its whole length the rocks are good, whilst the precipices to the south, overlooking the Dzasset Glacier, are exceedingly wild and imposing. At one point, near the big rock-tower below the summit, is a remarkable and tortuous chimney, which alone would make this ridge an attractive and interesting climb. A trickle of water runs through this chimney, so that if you are the first visitor of the season large quantities of ice have to be cleared away. On this occasion, and again in the following year, Fate has dictated that I should stand as a target at the lower mouth of this chasm whilst chips and blocks of ice of varied size, but uniform velocity, beat down upon my unprotected person in an intermittent cannonade. Nor is it possible to

avoid these projectiles, as they come into view quite suddenly and at the most various angles, and obey no obvious general law save that of gravitation.

But what left the most enduring impression on the minds of both Baker and myself was the wonderful southern arête, which we saw for the first time as we climbed this ridge. Starting from the Col Bonney, it runs up to the summit in one continuous series of rock towers, pinnacles, and weathered splinters. At the sight our young enthusiasm kindled, and for days we continually recurred to it. It soon transpired that the ridge was as yet unconquered, though it was vaguely rumoured that more than one party of climbers had looked at it and gone away. The guides, whilst quite willing to give it a trial, were far from sanguine as to our success. Several of the rock teeth are so very sharp and smooth that they appear to be impregnable, whilst the steep eastern face of the ridge, which falls in sheer precipices to the Dzasset Glacier, raises but slender hopes of the feasibility of traversing.

Save from a distance we saw no more of the Herbetet that year. A trip to Ceresole delayed us longer than had been anticipated, and when the time came for us to leave Cogne we could take with us nothing more substantial than the resolution that the Herbetet S. ridge should be placed in the forefront of the next season's programme. And though last August, when Albert Supersaxo and his young brother Benedict met me at Aosta, Baker was no longer of the party, his special message was that a vigorous and aggressive policy should be pursued in the matter of the Herbetet.

At Cogne I was joined by friends who reinforced the party, and many pleasant climbs resulted in their company. But the Herbetet ridge was not forgotten, and before their time was up I persuaded them to repeat our last year's ascent of the eastern ridge. One of the factors which inclined me to this plan was the admirable opportunity it offered of critically reconnoitring the details of the S. arête. Owing to the size of the caravan and the limited accommodation of the keepers' hut we made the ascent direct from Cogne, and as we gained the summit in an easy $8\frac{1}{2}$ hrs. I should say that sleeping out is a needless preliminary to this particular climb. As we fed and chattered and tried to identify the distant peaks from the summit of the Herbetet, Albert suddenly disappeared, and in a little while called to me from below to come and join him. This I did. We were standing some way down the southern ridge on a little projecting boss of rock,

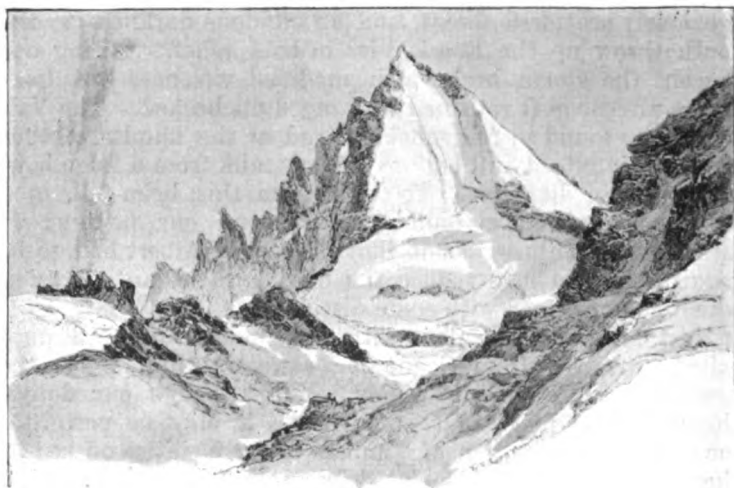
with a low natural wall of rock surrounding us on three sides. As I looked over the wall down on to the ridge beneath I saw that the portion on which we stood overhung, and that the pitch below would be a very difficult nut to crack. Albert gave it as his opinion that we could never climb up here, even if we were successful in overcoming the other obstacles which lay betwixt us and the Col Bonney. Of the gendarmes, and there were many, it was apparent to the meanest intelligence that several could not be climbed; and altogether we were quite baffled in our attempt to trace a promising route in the rather brief space of time at our disposal; for already the heavens were collecting their previously scattered forces, and an ominous darkness to the south threw up the Roccia Viva in bold relief. During our descent the storm broke with modified violence, but later in the afternoon it returned and raged unchecked. The Val-nontey we found in full sunshine, and at the hamlet of that name we indulged in libations of new milk from a huge bowl quite 2 ft. in diameter. To drink from this, brim-full, in a decorous manner we found quite beyond our powers; so disastrous a failure was it that the sedate Albert had to be requisitioned to first reduce the level a little, an operation which he performed with some distinction.

Next day I was left alone with the guides, and we at once exiled ourselves from Cogne for a week's climbing at the head of the Piantonetto valley. But, although our doings there have no place in this narrative, it may be permitted me to call the attention of climbers to the facilities offered by the very advantageously placed Piantonetto club hut. Situated at the foot of the Tour Grand St. Pierre, and at a height of over 9,000 ft., it affords ready access to quite a remarkable series of interesting rock-climbs. During our tenancy we were undisturbed, and it is my belief that the hut is less frequented than the attractiveness of the neighbouring mountains might lead one to expect.

On our return to Cogne I at once arranged for the taking of our belongings round to Valsavaranche by road, whilst we walked thither over the Col Bonney. This route was selected as it would give us the opportunity of a detailed examination of both sides of our Herbetet ridge from quite near at hand, and in particular we hoped by a close scrutiny of the two sides in rapid succession to obtain sufficient encouragement for a direct assault. But, quite apart from our special purpose, this expedition will always repay the climber. The views all around the Dzasset Glacier are exceedingly grand;

the Col itself is a quaint spot, a narrow gateway hacked out of the ridge for no obvious reason save that Nature had determined to make a col here at all costs; then, as the descent is made on the western side, that triplet of graceful peaks, the Charforon, Moncaiar, and Punta del Broglio, are conspicuous in the near distance.

As we traversed the Dzasset Glacier in huge zigzags we were from time to time forced right under the crags of the Herbetet; but even this close inspection did not satisfy us, and we eagerly pressed on to scan the western face. A steep ice couloir leads down on to the Montandeyné Glacier, and



VIEW OF MONT HERBETET FROM THE MONKI ALPS, SHOWING THE EASTERN SIDE OF THE SOUTH ARIÈRE. (After a drawing by Mr. E. T. Compton.)

when we had advanced to a convenient distance a council of war was held.

This is a suitable opportunity for introducing a brief description of the structure of the Herbetet. It is an example of that rather rare type of mountain a true pyramid. This is one of the reasons why the Herbetet—like the Weisshorn—forms such an effective feature in the landscape from whatever side it is viewed. At the summit three ridges join, from the north, east, and south respectively. The northern ridge, after giving off a spur to the north-west (which dies out in the Gran Neiron Glacier), runs down to the south Col de l'Herbetet. The eastern ridge runs down to the Valnontey and separates the Herbetet and Dzasset Glaciers. The southern ridge,

distinguished by its pinnacles, runs down to the Col Bonney. It receives midway a spur on the west, which comes up steeply from the east Col Gran Neiron. Hitherto the mountain has been climbed by the west and east ridges only. The first ascent (by Signor Barale in 1873) was made by the ridge from the south Col de l'Herbetet and by the north-west face. In 1888 Mr. Coolidge improved on this route by keeping to the north ridge the whole way, whilst in 1891 Messrs. Stallard and Ormerod made a useful variation by abandoning the ridge early for the north-east face, but joining it again above. When there is much ice on the north side of the mountain this last route is the one which involves the minimum of step-cutting. The eastern ridge provides a more interesting climb than any of the fore-named. It was first made by Messrs. Yeld and Baker in 1882.

But the southern ridge was now engaging our undivided attention. The first section from the Col Bonney runs almost horizontal and bears a few teeth; then, after a steep incline, there follow in close succession a small rock-tooth, two large and sharply-pointed aiguilles, two small ones joined by a little saddle, then a great square tower with two summits. This tower—the *Grosser Thurm*, as Albert called it—is a very conspicuous feature from the Montandeyné Glacier. Its northern summit marks also the point at which the ridge from the Col Gran Neiron joins the southern arête. The Thurm is followed by a splintered needle or two, and these by another great tower which overhangs the ridge towards the Col Bonney—a feature which had impressed itself upon us earlier in the day, when we were crossing the Dzasset Glacier. Then follow two more pinnacles, and a steep pitch leads up to a bulky-looking protuberance with three distinct summits. Then come two flattened aiguilles of fantastic appearance, and the ridge leads in four great steps to the summit. Though we thought we might possibly round the Grosser Thurm by a traverse on the east face, our observations on that side had given us no confidence about the overhanging tower. It was now patent that the western face could lend no assistance in this matter, as the rocks fell in uncompromising precipices from the supporting buttresses of the towers.

Albert, who had been consistently pessimistic about this climb, now volunteered the opinion that with luck we might reach the Grosser Thurm, but that beyond this point it was impossible to go. 'Bei diesem Grat,' he said, 'kommt kein Mensch auf'm Herbetet, niemals.' I asked him if he were

disposed to back his opinion. Eventually he offered to bet a level 100 fr. that the Herbetet was not climbed by this ridge during the present century, but before all the formalities had been concluded a large herd of *bouquetins* created a diversion and we tore wildly down the glacier.

Albert, notwithstanding the pious opinion which I have recorded, was as eager as the rest of us to try conclusions with the Herbetet. We contemplated making this our first expedition from Valsavaranche, but when the day came there was some doubt as to the stability of the weather, and it was decided to postpone the Herbetet till our return from a ramble in the Val d'Orco and Haute Maurienne. The decision was a prudent one, for on the day when we should have been on the Herbetet (September 11) we were overtaken on the Punta del Broglio about midday by a thunderstorm of unusual violence and grandeur.

A week later, as we were returning from the Maurienne, the way led us by the head of the Val des Rhêmes and over a col to the west of the King's Hunting Lodge, and so to the Col de Nivolet route. The whole of a cloudless afternoon the line of mountains from the Paradis to the Grivola was profiled against the sky in front of us, and we agreed with enthusiasm that the Herbetet must now be assailed. It was in exuberant spirits, therefore, that we raced down to Pont from the Aroletta cross and refreshed ourselves with great bowls of milk. Whilst Albert and I smoked, Benedict (who is a linguist) was sent to negotiate for the key of a certain solidly-built stone hut situate some little distance above the uninviting cow chalets of Montandeyné. But it seemed, after much palaver, that the owner was not readily accessible, nor was it certain that its interior would quite answer our purpose as a resting-place. We consequently dismissed from our minds all idea of sleeping out, and determined to make the climb direct from Valsavaranche.

On the morning of September 20, then, it was with unusual alacrity that we responded to the early call, and by 2.45 A.M. we were already on the road. The night was starlight, and the autumn air bit keenly, but there was no incident to delay us on our way. By 9.30 we had gained the bottom of the ice couloir which leads up to the Col Bonney from the Montandeyné Glacier. Here we took to the rocks of the S. arête of our mountain, aiming for the point where the nearly level bit from the col joins the more steeply rising portion. As the crest was approached we bore sharply N., following an easy ledge past the first three rock towers. We were now

approaching the Grosser Thurm, but as there was no possibility either of climbing it direct or turning it on the western face, which is very precipitous, we climbed up to the square-cut notch immediately S. of the two joined needles which lie below the tower. So far no difficulty of any sort had been encountered, and the ascent from the glacier had occupied us only half an hour. Our immediate objective was the Grosser Thurm, and with this in view we crossed over on to the eastern face. The rocks were warm, and, so far as we could see, quite free from snow, but our route was hidden from view by a smooth buttress which runs down from the Thurm some way to the Dzasset Glacier. Working horizontally at first, we turned the two little teeth, and then descended a smooth and miniature gully lying just S. of the buttress. The gully led us on to some slabs, and it was by these we hoped to circumvent the buttress, and reach the ridge again by some couloir on the other side. The portion of the gully which gives on to the slabs has not much to help the climber, and the last man had to be assisted down by those in front. A return from this point by the way we had come would not be easy, and the knowledge of this fact was not without its uses. Above us the rocks of the buttress formed a sheer precipice, whilst below a steep couloir—formed by the confluence of the two gullies on either side of the buttress—ran down to the glacier. Crossing the base of the buttress—at the place where it died out, so to speak—was a narrow ledge, which, if we could only reach it, must lead us into the other gully. But between us and the ledge was a considerable interval, so that a very long step is necessary to bring you on to it. When I explain that the extremity of the ledge towards us was in a distinctly shaky condition, whilst handhold there is none, it will be realised that the corner is an awkward one. One after another we jumped, and each dislodged some stones, thus widening the gap for our successors; and unless some compensating natural process restores the damage this corner must in time become a veritable *mauvais pas*. Nor do I believe that any other traverse can be found. The ledge was as good as could be desired, and brought us, now ascending slightly round the buttress, into a broad and open couloir. This we climbed, always hugging the buttress on our left; then, going straight up the very steep rocks of the Thurm, we stepped on to its comparatively level plateau midway between its two summits.

From this point we had hoped to see the nature of the

work before us, but the great overhanging tower, separated from us only by a few fragmentary splinters, blocked the view. No alternatives of route were open to us. The tower was unclimbable, and must be turned on the eastern face.

Whilst Albert and I occupied ourselves with the construction of a great cairn, Benedict climbed down into the couloir from which we had just ascended. And in a little while we heard the loud strokes of an axe, as of one trying to hew footsteps in the solid rock. The explanation of this curious proceeding was as follows: On the way up Benedict had seen something glistening in the gully; and, as most climbers know, crystals have a remarkable attraction for the fraternity of guides. Indeed, only a fortnight previously Albert had brought down with him from the summit of Monte Nero, unknown to me, a huge chunk of rock, fully twelve pounds in weight, for the sake of the numerous prisms of quartz which lay embedded in its surface. When Benedict rejoined us he gleefully showed me, lying side by side in the hollow of his palm, two tiny crystals, pink in colour and altogether destitute of value. Having wrapped them up in several pieces of newspaper, he stuffed them into the pocket of the rucksack. They were, it transpired, destined for the *Verschönerung* of his newly-married wife, who was now disconsolately awaiting his return to the Saas-Thal.

And now we approached the next great tower, the one which overhangs both to the S. and E. in such uncompromising fashion. We passed the intervening splinters, and walked right under the bulge of the tower, letting ourselves down into a steep little gully on the right. This gave access to a traverse—as pretty as it was unexpected—and by its aid we rounded the supporting buttress of our tower much as we had rounded the previous one. Then followed a broad, steep couloir, up the northern side of which we climbed; finally, we regained the ridge at 11.30 by the aid of a narrow tributary gully, having turned not only the overhanging tower, but two little aiguilles as well. This traverse, which had occupied us a full hour, was full of surprises. Before we had yet rounded the buttress, and there was no continuous view, we were in high trepidation lest it should run out, for without its friendly assistance we could never have regained the ridge. The rocks also, which led us to the ridge again, were always interesting, whilst the precipices below were magnificent.

In front of us the arête now sloped up steeply, this portion culminating in three obscure summits. Without difficulty we

clambered over first one and then another, and finding that from the highest we obtained an uninterrupted view of the final peak of the Herbetet, we paused to take stock of the situation and to snatch a hasty meal. In the intervals of these two important operations Albert and Benedict, giving full indulgence to what had with them become an uncontrollable passion, built a large and solid cairn.

The ridge, at first running level from our feet, is broken by two oddly curved, fantastic aiguilles; but, owing to their thinness, the view of the remaining portion of the climb was not obstructed. Beyond them the final peak, going up in four pitches to the top, was well in view. The platform above the second pitch I recognised at once as the spot from which Albert and I had reconnoitred the ridge on the occasion of our last ascent, and where we had been so unfavourably impressed with the rocks below. It was evident that to climb the peak we should have to go right up the nose, as the faces to right and left are quite smooth and vertical and offer no sort of assistance whatsoever. In the event of being turned at the second pitch we saw that by a long traverse across the south-eastern face of the mountain we might gain the eastern ridge, but this was merely a sort of emergency route by which to extricate ourselves after we had failed. Passing to the east of the two aiguilles, we soon reached the first of the pitches. This we climbed by a chimney on the eastern face. We were now confronted by the second pitch, the only obstacle between us and our goal. It presented itself to us as an angle contained by two smooth faces, the lower portion of which had been removed. Thus it bulged out over our heads. On the western side was a slab sloping downwards at an angle of 60° and then ending abruptly. This was well above our heads, but it was the only possible line of attack. Pressing my right shoulder against the rock and standing as firmly as possible, Albert was able to get a fair start by impressing his hob-nailed boots upon various portions of my body in turn. Meanwhile Benedict flourished his axe and applied it to that part of his brother at which the maximum of leverage could be obtained. In this way Albert was able to get part of his body on to the slab, but he could wriggle up no further and abandoned the attempt. I then had a try, and with plenty of prodding from behind got my chest on to the slab. Reaching up with my left hand, I found a slight depression on its surface, and in this depression were sundry obscure convexities. Pressing the palm of my hand into the depression, I tried to work my way up, but the hold was too far

above to be effective, and, the direction of my progression being outwards instead of upwards, I slid down ingloriously into the arms of those below.

Albert was now ready for a final effort, and, as he repeated his former tactics, we devoted all our energies to pinning him upon the slab; and, standing upon my back, Benedict was able to follow him a little way and aid him just at the critical moment when the inclination of the shelf tended to push him over the edge. Having to view these proceedings with my head screwed under my left arm like a contortionist, I am unable to explain how Albert passed from a position of unstable to one of stable equilibrium. His left leg gradually ascended, the knee reached the slab, his whole body glided upwards—at first slowly and hesitatingly, then with a confident rapidity. In a moment he was sitting on the low wall which part-surrounds the little plateau, and with an uncouth but triumphant shout he summoned me to follow. This I did with more enthusiasm than finished mountaineering skill; nor was the portion of rope betwixt me and the leader free from appreciable tension during the operation. On Benedict, who is seen at his best in places of this sort, we had no mercy, but, when the axes had been duly delivered, we hauled him up like a bale of goods.

The climb was now virtually over, and we paused to build yet another cairn to mark our satisfaction. It was no monument to our achievement, for the spot we had now reached is, as I have already shown, readily accessible from the summit. This point (12,396 ft.) we reached in any easy scramble at 1 P.M., 3½ hrs. after taking to the rocks to the N. of the Col Bonney. But here a surprise was in store for us. The familiar details seemed strangely altered, and the topmost tapering rocks did not overhang the south arête quite as of wont. The cairn also was missing. Could some Philistine have done this deed? A further inspection led us to the true explanation of this apparent outrage on our favourite Italian mountain. The summit had been destroyed by lightning. And then I was glad we had not lingered here on the occasion of our last ascent, and that we had postponed our projected attempt of the 11th. We now sat down on what remained of the Herbetet, and opened the rucksacks and lighted our pipes. And whilst I spread great spoonfuls of Madame Prayet's *confiture de framboises* upon biscuits Albert and Benedict took the summit in hand. Here also it was evident a very comprehensive restoration was necessary, and as far as possible it was carried out along the original lines, so much

so that I think the next visitor will admit that we have successfully effaced the ravages of Nature.

And now a word or two on the climb as a whole. From the first this ridge had obtained a high place in our esteem as being desirable beyond any other of the things as yet untrodden in the district. And, having traversed it, we had no cause to modify our opinion. The route may be recommended in the first place for its immunity from falling stones. The rocks are strong and firm (in some respects recalling the fine south ridge of the Aiguilles Rouges d'Arolla), and you may manœuvre amongst the gullies and ledges of the steep eastern face in absolute security. Those who have climbed amongst the Roccia Viva group or on the Grivola or Grand St. Pierre will know how to estimate this freedom from bombardment. And then there is the extreme grandeur of these savage crags and pinnacles, unrivalled in the Alps. No sense of monotony is ever felt, for the continual return to the ridge as the towers are turned or climbed gives an endless variety to the setting of these distances. But an especial and pre-eminent charm of the climb to me lay in the unexpectedness of the details of the route. We could never tell what was going to happen next, or that a particular traverse would lead us round the base of a given tower in the most beautiful manner conceivable. No doubt this particular charm is only to be experienced to the full on climbs as yet untrodden, and its pursuit in the European Alps must become more difficult from day to day: the return to the beaten track is like cider after champagne.

That the expedition had attained its object was due primarily to the good leading of Albert. Once on the mountain, he never hesitated in the selection of a route and his judgment never erred. That he is a guide of great ability those whom he serves know well, whilst his honest countenance and pleasant personality find him hosts of friends in every valley. The rocks also were in magnificent condition. For quite eight weeks no snow had fallen on the mountain, so that everything favoured the climber. How soon this ridge would recover after bad weather I cannot say, for I have never experienced a snow-storm in the Graians.

It was already half-past two when we turned to descend, and I was glad to take the opportunity of following the northern ridge, which leads direct to the Col de l'Herbetet. Having negotiated the rocks below the summit, we made a détour on to the north-east face, so as to avoid a long spell of step-cutting; but, as it was, the little ice slope delayed us a full hour before

we could work left and join the ridge below. Without stopping we raced down on to the Col and so to the Gran Neiron Glacier.

It is from a point above the right bank of this glacier that the photogravure of the west side of Mont Herbetet which accompanies this paper was taken. This picture (from the original negative kindly lent by Mr. G. P. Baker) shows our mountain on the left, whilst to the right are seen the Punta Budden, Becca di Montandeyné, and the Piccolo Paradiso. The Col Bonney and the first part of the southern ridge of Mont Herbetet are hidden by the buttress running up from the snowy eastern Col Gran Neiron. Projecting from behind this buttress, and nearly on a level with the Punta Budden, is the rock tower which overlooks the Col Bonney—the first tower on the ridge shown in Mr. Compton's drawing (cf. p. 88). The squarely built tower at the top of the Neiron buttress is the 'overhanging tower' of the narrative (hardly distinguishable in Mr. Compton's figure); it may be readily recognised, as from its base runs a snow gully right down to the Gran Neiron Glacier. The 'three obscure summits' (cf. p. 92) are masked by a second buttress; then follow the 'fantastic aiguilles' and the four great steps leading to the summit.

After a brief halt by the snout of this glacier we trod once more on springy turf; and as we descended into the Levionaglen Mont Herbetet, now illumined by the soft evening light, sank below the horizon and we saw it no more.

MOUNTAINEERING IN THE CANADIAN ROCKIES.

By S. E. S. ALLEN.

I.

THIS summary of four summers in the Canadian Rockies aims to indicate, to those interested in mountaineering, the almost inexhaustible material which these mountains afford. While the latter portions, dealing with expeditions of the past two seasons among hitherto partially or totally untrodden peaks and valleys, have to do with that main chain of the Rockies which is crossed by the Canadian Pacific Railway some 6 miles W. of Laggan station, the earlier part, somewhat introductory, deals also with a few climbs in that western parallel range of the Selkirks in the region explored by Rev. Mr. Green, and so delightfully described in his work 'Among Selkirk Glaciers.'

Banff, on the eastern Field, on the western slope of the main chain, and Lake Louise, near Laggan, at the crest, together with Glacier



MOUNT SIR DONALD FROM THE SUMMIT OF EAGLE PEAK.

House, in the Selkirks, are natural and comfortable centres for radiating climbs and explorations. With the exception of those regions adjacent to the railroad, the snowy Selkirks to N. and S. of Glacier House stretch for hundreds of miles, mostly unexplored and entirely unascended. At Field those subordinate Van Horne and Ottertail ranges are entirely untrodden by the climber. From Laggan northward the great rocky crest offers its countless peaks and hundreds of miles of snow field and névé. South of Lake Louise the superb Temple Lefroy group offers, with the exception of Mount Assiniboine, S.W. of Banff, the loftiest and most difficult summits; while from Banff not only the Assiniboine group but the whole eastern slope of the chain is more or less accessible by a great number of beautiful Indian hunting trails.

To Mr. Perley, manager of Glacier House, my thanks are due for his kind assistance in his Selkirk climbs of 1891 and 1893, as also to Mr. Astley, manager of the chalet at Lake Louise, for facilitating his explorations of the watershed fastnesses S. of the lake in 1894, and finally to Mr. T. E. Wilson, outfitter, of Banff, for his friendly aid and valuable information regarding routes through the mountains S. of Banff in the summer of 1895.

For my friends and companions of divers excursions, MM. Lewis F. Frissell, Yandel Henderson, Rev. Harry P. Nichols, Charles S. Thompson, Howard Franklin Smith, George Warrington, and W. D. Wilcox, I hope that portions of this account may recall some pleasant memories.

In August 1891, as I journeyed eastward from a month of climbing in the Sierras of California, attracted by the splendours of the Selkirks, I stopped at Glacier House on the Canadian Pacific Railway, and without loss of time climbed from Marion Lake to that long rocky ridge since called Mount Abbott, whose panorama, not unlike that from the Piz Languard, and so well summed up by Mr. Green in the words 'as fine as could be desired,' has now become deservedly familiar to many. And if anything further were necessary to seal an admiration for the Selkirks it was the scene from the south side of Mount Sir Donald, to which I had ascended by the east side of the Great Glacier, when for miles before me lay the shining plain of the *Ille-cille-waet* névé, guarded by the black and rugged Mount Macoun and the glistening Mount Fox, Mount Dawson, and Mount Donkin.

At Field I climbed to the fossil bed, and penetrated to the encircling walls of the snowy amphitheatre behind Mount Stephen. My friend Dr. S., who was with me here, ceased not to grieve for the Field of the '80's, a luxuriant garden, a bower of ferns and moss. The forest fire had claimed a fearful tribute and cast a blemish upon an unsurpassed scene.

But even so the place was most attractive, and as the young pines come up to heal the old scars will doubtless again resume its pristine loveliness.

The fire had not succeeded in crossing the Kicking Horse River, whose northern bank is still heavily timbered. Across the valley up

a steep ravine, through a labyrinth of willows, ascending with a friend, and then by steep ledges and slopes of broken slate, I soon found myself upon a pinnacle of Mount Burgess, barred from the highest point by a serrated ridge. Our surroundings were quite unique. The sun, vainly trying to penetrate the thin mist, which hovered everywhere and concealed the distant peaks, suffused it with a mellow glow, through which across the narrow valley loomed the yellow battlements of Mount Stephen, dotted with the snow of innumerable hollows, while far below us lay Emerald Lake, the bottom of a pit 3,000 ft. deep, whose sides were banks of lurid fog.

Emerald Lake was at that time unknown to the majority of travellers. Field itself was a busy rendezvous for prospectors, attracted by wild rumours of mineral wealth in the Ottertail range. One of these prospectors accompanied me next day on a trip to the lake by the way of the 'Natural Bridge.' Crossing at this wild cañon the Kicking Horse, we ascended the heavy timber of a west spur of Mount Burgess until meeting the trail, which further E. turned from the river bank. Throughout its entire length of some 10 miles it maintains nearly a constant level, crossing Emerald Creek and reaching the wooded bank of the lake, wherein lay mirrored the great rock peak upon whose ridge I had so lately stood. Upon the north-east bank Mount Field offered an easy and attractive climb. This entire region, being still unharmed by fires, possesses a charm which is not even exceeded by the more snowy Selkirks.

The 18 miles of increasing grandeur which I covered afoot from Field across the summit to Laggan culminated in the fitting climax of Lake Louise.

Cathedral Mount, a series of superb aiguilles E. of Mount Stephen, is only the first of that succession of peaks which all the way to Hector are seen to the S., their valleys leading off to alpine fastnesses. Some distance E. of Field there opens N. a valley, deep, heavily wooded, and leading to the rocky peaks and immense glaciers of the Waputtehk group, and all the icy crest upon the N., while from Hector runs S. the broad valley of which I shall speak again, to the south side of the Temple-Lefroy group. It was S.E. from Laggan station, whence its grandeur is so manifest, that I first saw Mount Temple, that splendid ice-crowned peak whose summit, nearly 7,000 ft. above Bow Valley, overtops all others on the C. P. R. The present road to Lake Louise, which follows the creek from the lake, was as yet unfinished, and the way led through the burnt timber, for even here the fire has done its hideous work. Most fortunate is it that this defect has not marred the immediate vicinity of Lake Louise, whose beauty, with the foreground of green forest and lower peaks framing the majestic ridge behind, is as exquisite now as when first described by Mr. Green, the calm that pervades the amphitheatre being broken only by the roar of the avalanches from the overhanging ice cliffs of the great white peak,* as with the crash of thunder they pour down its enormous walls.

* Mount Green.

I closed my climbing for the summer by an excursion to Lake Agnes, to which through the forest Mr. Astley had cut a trail. At the outlet of the lake the view northward over the broad Bow Valley is a pleasing contrast to the dark wall of Goat Mountain, across the valley of Lake Louise, or that of Mount Whyte, behind the lake. I noticed at the left extremity of the latter a towering aiguille, absolutely vertical from the lake. In the hope of turning it in flank or rear I ascended the ledge of that peculiar mountain locally known as the 'Beehive' to the top of the latter, whence I was able, by following the narrow ledges, to turn a corner and reach a wider gorge, choked by a vast boulder, upon which the remainder of its accompanying avalanche had come to rest. I could reach a portion of it, but, not knowing how securely it was wedged, hesitated to experiment with it. I finally passed the place and made the pinnacle. The view over the surrounding group was perfectly superb, embracing the summit névé of Mount Temple, the beautiful glacial face of Hazel Peak, and the wonderful hanging glacier that crowns the north side of the helmet-shaped Mount Lefroy, whose silvery folds and creases sparkling in the sunlight against the background of the sombre walls seem, instead of being sculptured in solid ice, to be of the froth of beaten egg or snowy sea foam, or some light and shining cumulus of cloud, just hovering there.

It was not until the summer of 1893 that I again found myself at Banff, on the east slope of the Rockies. The peaks at Banff, while not of great height, are somewhat deceptive, and no better preparation for the 'heavy' work of the crest or Selkirks can be imagined than they. Such, at any rate, I found the Rundle Ridge, that bare rock mass E. of the falls of the Bow whose north-west end is known as Twin Peak, while its south-east portion is called Razor Back. My ignorance of a path on the north side of the Spray greatly increased the toil. After a long struggle in the woods I climbed a rib of the Rundle range and halted, not on the highest point of the ridge, to be sure, but at a point about 8,000 ft. above the sea, whence to the N. and S. the main chain of the Rockies, rising tier on tier, was seen to culminate in the great peaks of the crest. To the S.E. a very conspicuous mountain, rising from a sea of peaks, attracted my attention, which I afterwards learned was Mount Assiniboine.

Being joined by a friend at Banff, who was indifferent as to destination, I decided to proceed at once to Lake Louise. Accordingly, procuring certain outfit from Mr. T. E. Wilson, we went down to Laggan by train. The chalet at Lake Louise had been destroyed by fire, and our quarters were in a tent at the water's edge. I was not long in procuring an Indian and pony to convey our tent and provisions up the valley to the base of the great white ridge,* upon which I wished to make the first attack. We camped on an eminence in the last grove of trees above the long glacier of the valley. At day-break, ascending the stream on the west side of the long glacier to a point almost beneath the overhanging cliffs of ice upon the right, we

* Mount Green.

gained by a torrent's bed the névé plateau above, where we were stopped by an intricate maze of crevasses so subtly bridged and concealed that 'the golden hour' was lost and we were obliged to return.

As outlined from the lake my plan was to gain from the névé plateau on the right a notch or depression in a subordinate northern ridge. Thence the summit of the Dome, as I called it, the W. extremity of the main ridge, could doubtless be reached by the snowy slopes of the Dome itself. This notch, by the way, is a possible pass over to Hector, could one only make it. From the top of the Dome to the actual summit of the peak (further E.) the ridge was in a very serrated condition. I believe that by keeping close to the top of the north side it could be done, however, for the angle of the north face, as I soon saw, was much less than it appeared from Lake Louise.

The north face was vertically streaked and scarred with avalanche tracks, as could be seen from the lake; but the condition of the slopes upon the right, which could only be seen in profile, was uncertain.

It being unlikely that the rock peaks* above these slopes would furnish the quantity of material for snow-slips abounding on the broad north face of the white crest, and the plateau being manifestly impracticable, we tried these slopes to the right in our second attempt upon our peak, ascending diagonally toward the notch. Unfortunately for us the whole slope was scalloped and furrowed into ridges and hollows by snow avalanches from the gullies above, whose source was further seen in considerable areas of snow on the ledges and an overhanging cornice on the summit of the ridge. As the sun arose the slopes became somewhat animated, particularly the great white face of the main ridge, and the air was shaken with the noise of thousands of snow-slips from above, and ice avalanches from the great ice walls crowning the cliffs below us, most of which would be entirely unheard and unseen at Lake Louise. In order to avoid danger from above we kept close to a series of projecting cliffs to which I had directed our course. As there was a bergschrund of indefinite dimensions in this vicinity, and the snow-slope was continually becoming steeper and softer, I was not sorry to be able to work over to a ledge in the cliffs upon which we rested, taking photographs. We were not far from the Notch, nor many feet below it, and our height was considerably over 10,000 ft. Though a somewhat precarious, it was yet an inspiring situation. The sun being now high the peaks were echoing an almost continuous roar of ice avalanches below, while the wind brought us in its capricious puffs the hiss of the snow-slips, as it often tosses the sleepy sound of distant waterfalls, now rising, now falling, now sustained, or varied by the occasional crack and crash of falling rocks. From the top of the long white ridge of the crest the superincumbent areas of snow or pieces of an overhanging cornice started on their downward course, darting over 'hot plates' on the way, and coming to rest in the crevasses of the hanging glaciers of the cliffs. Across the narrow valley was Mount Lefroy, its west arête

* Mounts Nichols and D'Espine.

seen almost in profile. I noticed a couloir reaching from the glacier below almost to the snow plateau above the west buttress, and thought then, as now, that early in the season the plateau could be reached, whence the arête is apparently not difficult. I was constrained, from the frequency with which avalanches fell into it from the crest, to call the narrow valley S. of Mount Lefroy, and the col connecting it with the crest, by the name of Death Trap. It is not impossible, however, that a safe ascent could be made to the top of the col by keeping close to Mount Lefroy. I subsequently had no trouble in reaching it from the S. in an expedition from Hector.

To the left or N. of Mount Lefroy was another narrow valley, at whose head was a truly remarkable aiguille*—a study for climbers. It would furnish work of the rarest sort. Over the top of this towered, in the distance, Mount Temple, showing the long S. arête, though at the time the state of my knowledge did not permit me to identify this peak. While still upon the ledge an interesting avalanche of snow descended close upon our right. I have never been nearer to an avalanche of this character, and while gratified that we had not started along the slope in that direction was glad to make its acquaintance. It was descending steadily and irresistibly, but I thought rather slowly, conformed by its weight and the shape of the gully to the appearance of an immense serpent, hissing as it went.

We had already been about as long upon these slopes as prudence could warrant, and so retraced our steps under the lee of the cliffs until the state of the snow forced us to descend. On leaving their protecting shelter we were exposed to avalanches from above, and as the slope was rather too steep to warrant a safe standing glissade (there being also an open crevasse below us near the plateau, necessitating a diagonal course to the bridge—the making of steps in the steep soft snow seeming also altogether too slow a process, exposed as we were to the snow-slips), we did about the only thing possible under the circumstances, and descended by the 'overlap,' the lower man anchoring firmly with feet and axe, digging the handle of the latter almost to the head in the snow, and bracing himself against it, while the upper man passed him, making the length of our rope below 30 ft., and anchoring while the other repeated the process, which required very little time to execute, and was absolutely safe, checking, indeed, several ugly slips.

The plateau below was torn and rent by the snow-slips from the slopes like the surface of a sea. We halted a moment for photographs, and then descended to the stream, whence the appearance of the blue overhanging séracs of the ice walls, with their immense transverse crevasses and crown of pure white snow, the blackness of the cliffs, and the green banks of the Alpine brook, running smoothly beside the long glacier of the valley, formed a scene of great beauty and grandeur. Our good Indian William was waiting for us with his pony at the small tent, and soon we were back at our large tent by the shore of lovely Lake Louise.

* The Mitre, as subsequently named by us.

My friend being now anxious to move on to the Selkirks, and not caring to renew the attack upon the white ridge,* we finally compromised by planning an exploration of Mount Temple. Our Indian William, being otherwise employed, thought his cousin Enoch Wildman would agree to go; and to see Enoch I visited their teepees, E. of Laggan, by the side of the swift Bow. After a host of savage dogs had been called off I was introduced to Enoch, a fine large Stoney, who looked twice his age, which was but nineteen years. He agreed to appear next day at the lake with a pony.†

Mount Temple, the highest mountain seen along the line—and, in my opinion, slightly higher than Mount Lefroy—towers, as I have said, in vertical walls S.E. of Laggan, an immense glacial plateau above sweeping down from the summit, a full 7,000 ft. above the shining Bow. The west and north sides, with the possible exception of a remarkable couloir, narrow and very steep, from 2,000 ft. to 3,000 ft. high, offered absolutely no possibilities of ascent.

To explore the eastern face we followed from Laggan the south bank of the winding Bow, gradually turning southward and upward as the great mass of Mount Temple drew nearer and nearer on the right. Much of the forest was still green, and, though it kept us busy to clear a path for the pony and blaze our route, it was delightfully cool, and the air was fresh and sweet.

A fierce thunderstorm delayed us on the open, above the timber line, which we weathered crouching beneath our tent, while the dark sky was lit with blinding flashes and the mountain-side seemed to shake with the deafening peals whose echoes played a chromatic scale in bass from cliff to cliff. But at length it was clear again, and we continued around the rough east slopes, searching for some brook whereby to camp, for it was growing late. As none appeared, and the way beyond led over slopes of broken rock, impassable for the pony, the others counselled camping by a bank of snow above, which would furnish water. As I have an aversion to melted snow, for no hygienic reasons, but because it generally tastes of smoke, I continued on some distance, and was delighted to discover, behind high piles of large blocks, unsuspected until actually seen, a circular basin at the very base of the vertical cliffs of Mount Temple, wherein was a small lake whose banks were very steep and lined with heather and scattered tamaracks. The others soon came up, and, fastening the pony in a grassy glade above, we set up the tent on the steep bank, at the water's edge. Fortunately the lake was shallow, and allowed us to build a foot-board or small

* Mount Green.

† These Indians, Stoneys from the Morley Reservation, were on a summer's outing. They narrated to me stories of famous hunters among them who had rescued themselves from broken crevasses by cutting their way up the sides with their hunting knives. Considering also that it is to them we owe the beautiful trails that follow the rivers or cross the divides of the Rockies, we may well believe that if trained they would show a capability of truly Swiss development in the higher arts of climbing. It is, however, true that the Stoney is intensely domestic, and on his hunting trips generally takes, if possible, his entire family, without which he is liable to home-sickness.

wharf of stones and logs, which kept us from sliding into the water. It was a very cold spot, the playground of fierce gusts which scattered in spray a waterfall from the cliffs above, hurling the water in all directions, so that but little reached the lake, and sometimes even tossing it upward and supporting it for some little time. The surface of the lake, dotted with floating masses of congealed snow from a large bank at its head, was never still, and yet in the morning the margin was lined with ice. Enoch declared it was too cold, and he must return to Laggan for more blankets. He was allowed to depart with the promise to return in two days. Next morning encircling the E. base of the cliffs I came upon a gorge, the steep walls rising 4,000 ft. above, crowned by pinnacles between which sparkled the summit cornices. The view eastward was over the broad valley below, with its chain of tiny lakes and winding stream, the northern continuation of what in 1894 I named Wenkchemna, the valley of ten peaks. The first of these, Mount Heejee, grew continually grander as I advanced, forming as it does the turning-point for the crest at which it bends from its most northerly to an easterly direction. Further on a clear stream wound through a soft Alpine meadow at the base of a large amphitheatre before plunging to the valley below. Thence I climbed a steep ridge and had an uninterrupted view of the valley opening eastward, containing two beautiful lakes at the foot of the crest, whose stream flows into the Wenkchemna creek at the N. end of Mount Heejee. After deciding to try Mount Temple next day by a long arête beyond, I returned along the steep slopes to the lake.

Starting before daylight next morning, we had reached a height of about 10,000 ft. upon this ridge when we encountered a stratification of steep hard rocks, which, though not impossible, we preferred to turn in flank by some gully if we could contrive to do so. In the hope of finding some such means of ascent we started to the left, around the corner, following the ledge, which soon became narrow, sloping, and covered with unstable rock. On one side were the literally overhanging walls of Mount Temple, while on the other was a sheer descent of 2,000 ft. to a magnificent snowy valley, in which two lakes appeared, still filled with floating blocks of blue winter's ice. The region to the S., with mountains wonderfully sharp and of great height, and quite unlocated upon Dr. Dawson's Reconnaissance Map, and with which I have since become well acquainted, was still an unnamed, unmapped, untrodden fairy land, a bewildering and seemingly endless range of rocky peaks and shining glaciers. I can still recall the thrill from the splendours of this then ideal scene, for while a sense of the individual grandeur of these giants of the crest has grown and deepened with intimacy, yet this has been gained at the expense of that more subtle and naive enchantment—a mingled bewilderment and delight. My photographs have since told me that our view embraced about 150° along the watershed from Mount Lefroy on the W. to Mount Heejee on the E. The overhanging cliffs at either extremity of our ledge formed a striking margin.

Although a steep gully was discovered, leading upward, yet the icy condition of its rocks, and the possibly fatal results of a slip, forbade

the undertaking. It was growing bitterly cold, and a storm of wind and snow, which had been hitherto confined to the higher portions of the mountain, began to fill the air with driving snow-flakes. Creeping back along the ledge to the arête, we hastened to lower and warmer regions.

Our last climb at Lake Louise was Goat Mountain, E. of the lake, which we made by ascending an avalanche-slide from the lake shore, skirting the cliffs, and making the summit from a rocky 'saddle' further E. Of the superb panorama from this peak I shall speak at another time.*

The first ascent which I made in the Selkirks, whither we now departed, was that of Eagle Peak. This rocky peak, upon the Selkirk watershed, is the second N. of Mount Sir Donald, than which it is about 1,000 ft. lower, or 9,600 ft. above the sea, and it rises immediately N. of Glacier House. I had always supposed that M. Huber had ascended it in his pioneering of Mount Sir Donald, but learned from Mr. Perley that his 'Eagle Peak' was to the right, or S., the first to the N. of Mount Sir Donald. Mr. Perley assured me that it was unascended, and, as the view from the summit promised to be fine, W. and I set out one morning to attempt it.

The easiest way of reaching the W. base of the peak was, of course, by following the trail to Mount Avalanche. I was not attracted by any part of the W. face for climbing purposes, nor, indeed, by the northern or the lower portions of the west arête, and so had planned to try the S.W. portions—that is, S. of the west arête—which were quite invisible from Glacier House.

To reach this we followed the path which leads to the great glacier, to the point where an avalanche has spread confusion in the valley, and, crossing the *Ille-cille-waet* on a long log, we ascended the S. side of that torrent, which descended the gorge above from the glacier basin S.W. of Eagle Peak. The timber was rough and the slope steep. Ascending, now, the broken rocks to the toe of a glacier above, we gained the steepening snow slopes on the S.W. side of our peak at the left margin of this glacier, and over a more or less mixed face climbed to the western arête, which we made at a point some 400 ft. below the summit. There was a steep snow gully further to our right, also leading up to the arête. The rest of the distance was a pleasant scramble, and soon we were upon the summit.

Eastward, like some phantom range, some fair creature of the imagination, soared through banks of cloud the distant Rockies, as from

* From this point we witnessed an interesting phenomenon. The N. side of Bow Valley was being swept by a forest fire, and the smoke, collecting, was ascending in a broad dark column to a height about twice that of Mount Temple, where the state of the atmosphere produced a condensation of moisture, and its top was covered with a vast cap of silvery white cloud—the whole a colossal toadstool, with snowy cap and jet black stem, 15,000 ft. tall! It retained its general form, with slight modifications, for nearly a whole day. The appearance of these fires at night was grand in the extreme, as the great bed of flame, licking the hill-sides across the valley, twisted from grove to grove to the very base of the cliffs. We were for a time quite disturbed lest it should cross the Bow and invade the Lake Louise region.

the summit of the Dom at Randa stretch the countless summits of the Oberland. Nor is the view northward, beyond Mount Avalanche, of the transverse Hermit range, along the gleaming crest and far beyond, less inspiring in its endless Alpine variety than the aspect from that same point in Switzerland of the sweeping glaciers of that snowy chain beyond the Täschhorn. But if there we see a distant Matterhorn below us, here the great pyramid of Mount Sir Donald almost casts its shadow upon us. Instead of a sharp Weisshorn we have a curving glacier-clad Mount Bonney, while beyond the vast Ille-cille-waet névé and Asulkan Pass the distant Dawson group, so graceful, so beautiful, add a magic finish to this incomparable view. I cannot better describe the valley of the Ille-cille-waet, between Mount Bonney and the bold Mount Cheops, than to liken it to the valley of the Visp, as from the summit of the Matterhorn I have seen it lying dark between the Weisshorn and the Dom. Surely the similarity of such scenes in beauty and genuine Alpine characteristics is independent of paltry height above the sea.

The sun was already low when we started down, for we had lingered too long in admiration of the superb panorama. After glissading down the snow slopes and reaching the basin the light had nearly failed, and, knowing that in the thick timber it would be already dark, we had the alternative of either descending the bed of the stream or staying where we were. The thought of anxious friends at Glacier House turned the scale, and we started down the gorge.

I should not care to repeat in daylight the descent of this stream. The approach of darkness kept pace with the increasing steepness and chaotic condition of the banks. For over three hours we rolled, slid, crawled, fell—anything but climbed—down that frightful place, soaked by constant falls into the stream below, bruised and cut with the sharp rocks, or making progress by clinging to alder boughs, suspended over uncertain depths of blackness. On one occasion hearing calls from W., I found him hanging head downward, with feet caught in an alder tangle, and doubly unable, from his heavy camera, which he was carrying over his back, to extricate himself. How our cameras escaped being entirely demolished I cannot understand. Later on W. returned the compliment when, having reached the logs piled high in the valley, I slipped from one upon which I was walking in blind faith, and should be still wedged in that deep dark hole but for his friendly assistance. Finally, we found a log by which we cautiously crossed the Ille-cille-waet, a vast white, roaring, surging abyss below, and reached Glacier House at about 11 p.m. Our excursion had taken 12 hours.

Our next peak was Cheops, the rocky pyramid at the W. end of the Hermit range, across the Ille-cille-waet valley from Mount Bonney. We went down to the Loop, crossed the river on the long trestle, and struck diagonally upward from the first snow shed through the heavy underbrush and fallen timber of Mount Cheops's lower S.W. slopes. This was the dry side of the mountain, and ere we reached a stream on the W. side we had reason to see

that a water-bottle should be taken on this climb. Upon reaching this stream we bore to the left, or W., continually, and meeting the W. arête of Cheops, where a remarkable snow cornice* curved over to the N., ascended the ridge to the summit.

The E. face of Cheops, as indeed the E. and S.E. faces of the entire Hermit range, carries snow and glaciers. The panorama is very fine, although, being a less elevated point, it is less extensive than that from Eagle Peak. Eastward lay Rogers Pass, with the great rock peaks the Hermit and Mount Macdonald on either side; from the latter southward the watershed peaks, Mount Avalanche and Eagle Peak, Uto Peak and Sir Donald, the Ille-cille-waet névé and Asulkan Pass; Mount Bonney across the valley to the S., with its beautiful glaciers and difficult N. face, upon which Mr. Green made his brilliant ascent; Ross Peak and the broad Ille-cille-waet valley to the westward, while the region W.N.W. and N.W. of Cheops was most attractive. Of its peaks and valleys none are named or mapped. They constitute, of course, a portion of the 'West Slope' of the Selkirks, the watershed being further E., and, though lower than Mount Bonney and Sir Donald or the Dawson group, they are rock peaks of strange fantastic shapes, whose snow-fields, very numerous and of all sizes, give a decidedly novel and unusual aspect to this group, which is worthy of the best efforts of a climber and explorer. The entire trip occupied $8\frac{1}{2}$ hours from Glacier House.

I finished the season with an expedition to Mount Fox. My friends N. and T. turned up unexpectedly at Glacier House, and, as they were ready for anything, I suggested an excursion across the Asulkan Pass to the Dawson group.

Who can adequately praise the mingled beauties of a Selkirk woodland trail, as by foaming torrents or quiet waters it winds through the tall forest, whose arching boughs and tangles of vine and creeper sift the quivering sunbeams and fresco with swaying shadows the banks of cool deep moss, or the beds of fern, waist high, and cast a spell more subtle than moonlight over their moist and fragrant luxuriance? Surely even the memories of more exalted experiences, the rocky cliffs or snowy crests of a frozen upper world—an Alpine sea—would be at best but harsh and incomplete without these added charms. Not even the toil of our heavy packs could blind us to such delights, nor to those of the gay pastures, as amid widening vistas of peaks and waterfalls we climbed the pass upon its eastern side, crossed its crevassed névé, and camped in some prospector's demolished hut upon a shelf in that exceedingly steep slope above the Geikie Glacier, where Mr. Green had to excavate his bivouac with ice axes.

N. has so delightfully described our ascent of Mount Fox, which we made next morning, in a '94 No. of 'Appalachia,' that I should be rash to attempt to improve upon it. This superb Dawson group has been too often praised to require any further recommendations. The

* Showing a strange facial profile.

surprising part of it is that its amazing Alpine grandeur should attract so few mountaineers from year to year.

We made the peak, as suggested by Mr. Green, from the top of the Dawson Glacier, turning the sharp west end of the 'shoulder' by the snow slopes and gullies on the south side, and coming up upon the long west arête at a higher point. The view S. along the watershed, with its countless unexplored peaks and ridges, the long white face of Mount Purity, so like that of the Königspitze from the summit of the Ortler, and seen across the interesting Dawson Pass, crossed by M. Huber, to say nothing of the Ille-cille-waet névé and the huge form of Mount Sir Donald—all this wonderful panorama makes Mount Fox a point which must eventually be famous among climbers.

Not the least of the glories of this scene was the vertical, rugged, icy north face of Mount Dawson, highest of the group, across the narrow ice-filled valley which echoes the crash of its tons of falling rock.

The 2,000 ft. of steep slope from the Geikie Glacier to the cabin was made in a pouring rain, in twilight, and finally in total darkness. We determined the height of the peak as being 10,200 ft. above the sea. Ours was the second ascent, the first having been, as I understand, made from the Ille-cille-waet névé.

I hesitate to include a 'crevasse incident' which recurs, perhaps too vividly, to my memory. It occurred as we were returning next day over the Asulkan névé. The warm sun had obliterated our tracks, and save for occasional evidences of our route the latter had to be again evolved. I had crossed in safety a long, bridged, transverse crevasse, but on reaching the other side a larger one was seen a few feet beyond, as evidenced by a wide depression and by probing. It became necessary to make a right angle along the névé-capped ice-rib whereon I stood, carefully feeling for intercepting crevasses. The one in the rear widened in this direction, and as our party was but three in number, with conventional length of rope, the others had to come over to the 'rib' before I had gone far. In feeling for a bridge to cross the wide crevasse to my right, its edge, upon which I stood, though having felt safe to the probe, gave way. It did not yield vertically, however, but diagonally, towards the crevasse. I was fortunately able by a backward spring to sustain myself on back and elbows, my feet hanging in space. When I wriggled upon the rib again I could not help admiring the exquisite variety of colour of that small round aperture, from the dazzling whiteness of the snow through all the gradations of blues into subterranean darkness. Further on we succeeded in finding a bridge. The affair called up at the time the whole question of the relation, in such critical positions, of 'team work' to individual responsibility, and of the necessity on such occasions, particularly for the one who is leading on a crevassed plateau, of supplementing by a personal alertness that 'aid and comfort' from companions which from their own inopportune positions they may be totally unable to render. The same thing was first impressed upon my mind by a similar situation in a descent from the

Weisskugel by the Hintereis Glacier behind Josef Spectenhauser, when by a forward spring he arrested himself upon the further edge of a broken crevasse.*

In the summer of 1894, upon arriving at Laggan (Thursday, July 26), I was met with the account of what might have been a fatal accident to one of my friends who had preceded me. A party of three had made an attempt to ascend Mount Lefroy by the couloir upon its N.W. buttress. As I understand it, they had exchanged the couloir, which was growing uncomfortably steep, for the adjacent ledges. Here the centre man had in some way dislodged a large boulder, which bowled over the end man to a ledge some feet below, injuring a hip muscle and rendering him quite helpless. He was with difficulty lowered from ledge to ledge, and finally down the couloir to the glacier, whence at a later hour he was removed to the chalet, and was still upon crutches when I arrived.†

Our first ascent was a small peak W. of Lake Louise, a useful surveying point, which we named Mount Piran. A comfortable new chalet had been erected on the site of the old one, burned in 1893.

The day following (Saturday), the valley to the W. was explored, whose stream had been observed to flow from a little lake at the western foot of Mount Piran. We skirted the N. base of the 'Little Beehive,' where the forest struggles for supremacy with quartzite cliffs and ledges, clothed with moss and stunted pine. After 2 hrs. of slow progress, during which we were continually forced to descend, we emerged about noon upon a sloping meadow fringed with painters' brush. A snow-bank above furnished us with a drink, and, hurrying on through thick forest, we at length came upon our desired stream in a little hollow hung with moss and ferns, with two graceful waterfalls behind. We followed its eastern bank, clinging to roots and boughs and moss, for the stream was a succession of waterfalls, and we gave it the Indian name of Minewakun, or cascade.

In about an hour we stood upon the bank of Lake Minewakun,

* I desire to call attention to an interesting account in the *Department of the Interior Annual Report for 1892*, p. 70, by W. S. Drewry, D.L.S., of certain explorations in the Selkirk Range S. and W. of the region surveyed by Mr. Green, which may be of assistance to climbers and explorers of the Southern Selkirks. The same volume also contains an article and sketch-map, by Messrs. Drewry and MacArthur, of portions of the Rocky Mountains, to which reference will be made elsewhere.

† As Mr. Wilcox barely mentions the accident in an article upon Lake Louise in the *Geographical Journal* for February, I desire, as historian of the mountaineering aspects of the affair, to state that the highest praise is due to all concerned—to himself and to Mr. Henderson for their skill, to Mr. Frissell for his pluck. The combined efforts of the two held F. when the tug came, and probably prevented the necessity of recording the first fatality in the annals of Canadian mountaineering. If it was W. who retraced the entire distance to the chalet for assistance, it was H. who spread his coat upon the Green glacier for F. to lie upon, and remained with him through the cold night until the assistance came. We note with pleasure a skillful emergence from such crises, which are fortunately rare, but occasionally unavoidable, and with admiration the exhibition of true sportsmanship to which they conduce.

about the size of Lake Agnes, and lying between Mount Piran and Mount Niblock, whose great columnar summit 2,000 ft. above was reflected in its surface of transparent green. It was just at timber-line, 6,900 ft. above the sea. Behind us lay the broad Bow Valley, with its winding river.

After a halt for bearings and photographs, we followed the soft, wet meadow to the base of the snow-slopes leading up to the pass, to the E., at right angles to the valley. This gave us no difficulty, though just below the summit of the col a little step cutting was helpful in the frozen crust. The height of the Minewakun Pass was 7,900 ft.

It was blowing quite a gale on the summit, so we were glad to hurry down the easy slopes of rock and scree to the valley of Lake Agnes, and thence by the trail to Lake Louise.

Spending Sunday as a day of rest, four of us started on Monday to explore the eastern tributary of the great glacier S. of Lake Louise. This latter glacier I have called upon my map by the name of the great peak from whose base it flows, and the naming of which I shall discuss at some length in another place.

The eastern tributary glacier which we planned to explore occupies a narrow valley between the enormous wall of Mount Lefroy on the S., from whose hanging glacier 3,000 ft. above drop frequent avalanches, and the steep cliffs of Hazel Peak on the N. From the ridge at the head of this valley connecting these two peaks rose a sharp aiguille, which we named the Mitre. To either shoulder led steep couloirs, the southern one inaccessible, filled with ice-falls and continuous schrunds, and the left or northern one broader, and forming the main névé of the Mitre Glacier. It contained several long but not continuous crevasses, and was less steep than the other. As it was still early in the day, we determined to ascend this pass.

There was a brief delay on the lower slopes caused by the third man breaking through the crust of a crevasse, which the soundings had failed to indicate. Proceeding upward, we crossed the first schrund, which was nicely bridged. The second necessitated a long détour, and, owing to the presence of smaller intermediate crevasses, it was necessary to hug the lower lip of the schrund, whose leaning wall we could at times touch with our hands. Here, with the steep crevassed slope to the left and the gaping schrund to the right, could be felt the exhilaration that comes from genuine climbing. Judging, however, from the running comments of my friend in the rear, lately pulled from the crevasse, it was not for him unalloyed bliss.

After the bridge was crossed the slope steepened, and frequent step-cutting was necessary. Our progress was slow, as every step was made large to ensure safety on our return. This continuous chopping was rather wearing on one not yet in training, and my back and arms seemed to lose all feeling and to work almost automatically. Never did any rest seem more delicious than our half-hour on a rock upon the left, to which we ascended diagonally, and partook of lunch; nor was ever avalanche grander or more impressive than the one which at this time we saw, dashing like a vast shining cataract from the summit glacier of Mount Lefroy, and spreading in spray as it darted from the

dazzling splendours of the upper peak into the shadows of the Mitre valley.

The remainder of the ascent to the col was less steep, and the snow was good. As we stepped upon the narrow ridge 9,000 ft. above the sea, the view beyond was indeed beautiful, which, by the Indian equivalent, Wastach, I entitled it. From our feet descended a steep snow couloir between the cliffs of Hazel Peak and the Mitre, which formed the frame for a picture of a broad valley two miles in width, coloured with the varying greens of forest and meadow, drained by a sinuous river, and bounded upon the opposite side by a range of sharp dolomitic peaks bearing snow and glacier in the depressions, and a fine snow pass beyond which other summits rose. The afternoon sun lit up the scene with brilliant light, and as we turned to survey the valley whence we had come, already darkened with lengthening shadows from the gloomy walls, its ice and rock and snow relieved by no contrast of vegetation, doubtless the æsthetic suggestions of the two prospects made us the more loth to incur the danger of a descent down the slopes of ice and névé, and more willing, even at the risk of being benighted, to descend into this attractive valley.

The snow in the gully was good, and we started to glissade. As two of the party were entirely unfamiliar with this method of descent, we again roped. I was the last man. I had used the rope glissade with great advantage on former occasions, but a moderate and uniform rate is absolutely necessary. The pace set by our friend in the van might have answered very well for an individual, but was a little too rapid for the party as a whole, the amusing consequence being that we all exchanged the standing for the recumbent position. Being furthest removed from the centre of force, I was fortunately enabled, on this occasion, to add to my experiences that of the nature of the diverse strains and tensions acting upon a particle at the end of a whip when it is whirled and snapped, and I regret that approaching dusk prevented more than a cursory study of my tracks in the snow.

Descending finally the rock ledges and slopes of scrubby spruce to the stream below, we discovered that this flowed from the west end of a magnificent semicircular glacier which I called the Half-moon Glacier. It lies at the base of the bounding range at the head of the Wastach Valley, and is the product of the avalanches which sweep the steep ice couloirs, or fall from the eastern side of Mount Lefroy. Lower down the stream united with another branch flowing from the eastern horn of this glacial crescent.

We followed the stream down a great natural staircase of quartzite blocks between walls of green and beneath a dome of blue. Behind us to the S. towered the great rock peak which I have named Hungabee or the Chieftain. At its feet, high above the forest trees, shone the great blue glacier.

After joining the other stream, the Wastach River left its stately, almost artificial, pleasure-ground to fight its way through débris and thick forests to the Bow River. When the going became rough, G., one of my friends, began to show signs of lameness. The others, who gained upon us, left a note attached to a stake, announcing their direc-

tion—an ascent of several hundred feet through forest to skirt the cliffs of Goat Mountain. Such an ascent was for my friend impossible, and we were benighted in a wretched place upon a steep bank strewn with fallen timber. Sleep was impossible, and a small fire only partially relieved the chill of the night wind that swept down the valley. My poor friend was soon unable to move his limbs, and I was obliged to turn him as upon a pivot, with his feet for a fulcrum, whenever he desired a change of posture. After an exhaustive review of our eventful day, and a lamentable failure to get up a philosophical discussion (for G. is above all things a philosopher), we awaited the dawn in silent misery.

Carefully extinguishing the fire at daybreak, we left the river and kept a straight line through the rough timber for six miles to Laggan. Though, as he afterwards confessed, it caused him great suffering, G. gave a superb exhibition of pluck, refusing all assistance, and maintaining a steady pace. Both of us were affected with sore eyes from sleeplessness and the smoke of the fire.

Thursday and Friday were rainy, but on Saturday, August 4, two of us left Lake Louise with camping outfit and provisions to establish a camp in Wastach Valley, as near as possible to the foot of Mount Temple, which forms the northern extremity of the range upon the eastern side of this valley. This peak, upon which I had been unsuccessful the preceding summer in an attempt upon its eastern face, was evidently impossible from the N. and W., and the only hope was from the S.E. or S.W., which I planned to reconnoitre. Leaving one Indian and pony to bring some provisions then being prepared, H. and I started eastward through the forest from the Louise stream.

Keeping as nearly as possible the elevation of 6,500 ft., we followed a line of muskeags or peat swamps, which lay at this level, and afforded much better going than the dense forest. We ate our lunch upon reaching the Wastach River, not far from the scene of my uncomfortable bivouac three days before. From this point the view up the valley was superb, yet gloomy. Ahead, to the S., stood the hazy, sharp peak, guarding the entrance, which we named Mount Sheol, with Hazel Peak and Goat Mountain to the right. To the E., Mount Temple shut in the valley, with its fearful cliffs and shining cap of ice. The pony grazing contentedly in the long grass, the river gliding quietly between low banks, as if resting from its recent conflict in the defile between Mounts Temple and Sheol before it should take its final plunge to the Bow Valley, and the Indian in his picturesque garb of skins, together with suitable additions of forest, cloud and sky, completed this characteristic scene.

Where the stream was crowded between Mounts Temple and Sheol the W. bank became almost impassable from fallen timber and dense underbrush. The logs were piled high above our heads in many places, and long détours were necessary. In a later trip we discovered the eastern bank to be much better.

Just below the junction of the streams we forded the river, and camped in a heather meadow. The other Indian joined us soon, and we set up the tent upon the ice-axes, with the roof low for additional

warmth. We were quite close to the western wall of Mount Temple, and could watch the fading colours pass over its glistening cap till night called us to rest and sleep.

Deserted next morning by the fickle Indians, we proceeded up the left or eastern branch of the Wastach River, each leading a horse. The packs gave us great trouble, and on one occasion a horse rolled 30 ft. down a bank, and narrowly escaped a plunge into the torrent.

In about 2 hrs. we established our permanent camp on the edge of a swampy meadow, just below the pass connecting Mount Temple with the next peak to the S., which we called the Sentinel, and the pass Sentinel Pass. Thus we had a full view of the whole S.W. side of Mount Temple, and it was far from attractive. Slopes of broken rock led up to the base of gigantic cliffs, serryed with numerous unattractive gullies. To the N. of Sentinel Pass rose a perpendicular cliff or 'step,' and above this another, and, could the top of this second step by any means be reached, an easy slope of rock led to the summit.

South of the Sentinel was a sharp peak, which we called the Cathedral, and then came the broad snow pass we had seen from Mitre Col. This pass, which we crossed on the following day, we named from the valley—Wastach—since it was the main entrance to the next valley to the E. Then came the Hungabee circular range, bounding the valley to the S., with the Half-moon Glacier at its feet; then to the S.W. the walls of Mount Lefroy capped with ice, and the cliffs of the Mitre and Hazel Peak shutting in the valley on the W. The Mitre Pass was only partially visible. Such was the panorama as seen from the river bank, 100 yards from our tent; the altitude was 6,900 ft. above the sea.

Ascending the Sentinel Pass next morning, we were struck with the grand appearance of the Sentinel. A vast dome of rock, it bears upon its lower slopes great ice-fields, whence rise in solitary grandeur slender columns or pinnacles several hundred feet in height. We traversed the lower snow-slopes of the Sentinel Pass, which were succeeded by a short ice-slope, and this in turn by a most dangerous slope of unstable rock, every step upon which caused a prodigious slipping all around us, and threatened to dialodge great boulders above. There was no secure handhold, and the weight had to be carefully distributed upon all four members. From the top, which we finally reached, 8,950 ft. above the sea, two small green lakes* were visible just beneath us, fed by the snow-fields on this side of the pass. These I named Minnestimma, or sleeping water. The valley beyond was the one into which I had looked from Mount Temple in the summer of 1893. I afterwards saw that it was bounded on the E. by a superb range of ten sharp peaks, to which I applied the Indian numerals from one to ten. Upon descending the pass I saw at the base of No. 1 Mount Heejee a grand and gloomy lake, reflecting in its dark surface the walls and hanging glaciers of Mount Heejee. This lake, which I

* Those seen in 1893 from our highest point on Mount Temple, but now free from floating ice, because it was later in the season.

named Heejee, I had photographed the previous summer from near our camp at the base of Mount Temple. It is about three-quarters of a mile in length, and, like the other peaks and lakes of this region, hitherto unmapped.*

The summit glaciers of Mount Heejee are the most extensive of the kind I have seen in this region. The summit of the mountain consists of a long ridge rising from a great plateau of glacier and névé. This ridge runs about N. and S., and its appearance from the W. is not unlike that of the northern face of Mount Dawson in the Selkirks. Mount Heejee should be one of the chief attractions to future climbers on the watershed. Its height is about the same as Mount Temple—perhaps slightly less, though, indeed, a considerable number of these watershed giants have yet to be assigned their relative positions as to altitude. There should certainly not be a difference of many feet between Mounts Temple and Heejee, Lefroy, Neptuak, Hungabee, Ringrose, Green, Huber, Biddle, &c.

The above-mentioned range of ten peaks lying upon the actual watershed runs S. and W. from Mount Heejee. Between the peaks are slender precipitous couloirs of ice, the largest of which is upon No. 8, Saknowa, curving in its descent like a bended bow set on end, and having a vertical height of over 4,000 ft. None of the couloirs upon this western side are suitable to ascend.

Mount Neptuak, the ninth peak, as subsequently seen from the Wenkchemna Pass, from the E. side of which it rises, strongly suggests the Matterhorn, and is about 1,000 ft. higher than Mount Sir Donald in the Selkirks. At the base of the range runs a glacier, largely hidden by débris, with large lateral moraine.

I have described this Wenkchemna range (named, like the valley and river and pass at its head, after the tenth peak, Mount Wenkchemna) as a whole, though not all of it was visible from the foot of Sentinel Pass. Upon looking back at the latter from the Minnestimma lakes, I observed that it would be possible, by continuing along the right of the arête which ran N. from Sentinel Pass to the top of Mount Temple and below it, to avoid the two perpendicular cliffs or steps of hard stratification seen in profile from the camp. There was some doubt about surmounting the level of the second or higher of the two, but, could this be passed, I felt sure that the easy limestone slope on the western side could be reached and the summit gained. This, as it afterwards proved, it was possible to do.

Skirting the upper slopes on the western side of Wenkchemna Valley, with the Sentinel and Cathedral upon our right, we finally reached the level of the valley at its head, where two small lakes ap-

* J. J. MacArthur, D.L.S., mentions, in *Ann. Rep. Dept. Int.*, 1892, p. 75, having 'remained a week at Laggan, and occupied four camera stations, taking in the summit range of the Rockies S. of Lake Louise and Mount Temple.' Two of these were probably Mount Piran and Goat Mountain, upon which I found cairns. Mr. Green mentions, as early as 1889, that Mr. MacArthur was engaged in this vicinity. I am unaware how much of the range he covered, and it is to be regretted that the results have never been reduced.

peared. These, though small, become, from the wonderful beauty of their surroundings, the peers of any lakes in the Rocky Mountains. The whole Wenkchemna range is reflected in their black water, though, of course, only a section is seen at any one point, since they are so small.

A broad snow-pass led into a valley beyond to the S., between Mount Neptuak and Mount Wenkchemna, of which I have already spoken as the Wenkchemna Pass. As it was too late to think of ascending this, we began to climb the steep rock-slope which we believed led up to that snowy pass seen from Mitre Col, which I have already mentioned as Wastach Pass, but which was as yet uncrossed, and by which we hoped to regain the Wastach Valley and our tent.

The ascent proved difficult in places, as the rocks were loose and there was lack of handhold. The bed of the stream proved much better than the ledges. When we reached a broad, sloping plateau of broken rock, just below the summit, it began to hail, and from the summit, 8,700 ft. above the sea, we discerned through the driving sleet a very steep descent, unfit for glissading. We descended upon the right side of the snow-field, where the junction of snow and rock formed a miniature gully, less steep than the main slope and offering handhold. The slopes below were less steep, and we were soon traversing a series of quartzite plateaux to the right. Upon leaving the snow-slopes we unroped, and H., carrying the rope, walked in advance. Observing that the easiest way of descent to a plateau of lower level was by a short, easy slope of soft snow, we were only too glad to use it. The field was compressed between two buttresses of rock some distance ahead of us, and I asked H., who was a little in advance, to test it for us for ice; but he, understanding me to mean crevasses, and seeing none, stepped upon it without more ado. Instantly his feet shot from under him, and he disappeared over the curving slope, which became suddenly steep at this place. The melting of the field above had, of course, made this narrow portion icy. He stopped himself further down, where the snow became soft again, but, as he dramatically described it, with his feet dangling over a bergschrund, and just in the nick of time. I did not investigate the bergschrund, as it took me 15 min. to cut steps down the shining path of his descent. Not even in his pursuit of the Rocky Mountain goat, in which, being a fine shot, he was the most successful member of the party, did H. succeed in getting into a more exciting situation.

The others arrived that night from Lake Louise, but the weather continued stormy for three days, and it was not until Friday that we again crossed the Wastach Pass, and ascended the snow-fields of the Wenkchemna Pass, 8,800 ft. above the sea. The retrospect of the bleak Wenkchemna Valley behind us and of its rocky peaks increased in grandeur as we advanced, particularly Mount Neptuak, E. of the col, but it was not until the top was reached that its imposing appearance and resemblance to the Matterhorn was most distinctly seen. Here is indeed a puzzle for some climber to solve! I remained a

considerable time on the summit, taking photographs and bearings. The view down the Wenkchemna Valley was very fine, and the resemblance to the Matterhorn of Mount Neptuak, E. of the col, has already been noticed. From this pass also I obtained my only distant view of Mount Temple from the S., seen over the tops of the Cathedral and the Sentinel.

H. and F. returned after lunch to the camp, while W. descended to the level of the valley beyond to gain information concerning the pass at its head. He reported a glacier and névé at the head of the valley, but could give no definite information about it. As time was passing rapidly, and much remained to be done, I desired to explore this pass on the following day, but was unable to persuade any of the others to consider the project, except H., who, in the hope of seeing goats, promised to join me if sore feet would permit, but next morning he deemed it wisest not to go. The others were, quite naturally, weary of camp fare, and desired to spend Sunday at Lake Louise.

Thus, while not relishing the idea of exploring alone, I felt that this was perhaps the only opportunity which might offer of settling the open question about the valleys back of Mount Lefroy. And, indeed, this proved to be the case, for the information acquired on this expedition, combined with that obtained on my expeditions from Hector, furnished the directions and number of the ranges in this vicinity. Nor was there any other chance of making this trip, since our subsequent visit to the Wastach Valley was a short one, and occupied solely with the ascents of Mount Temple and Hazel Peak.

Crossing the Wastach and Wenkchemna Passes, I reached the level of the rocky, desolate, treeless valley beyond. This I have called Opabin, or rocky. It runs nearly E. and W., and the stream which flows from its glacier may be, as I shall suggest later, the head waters of the Vermilion River. The descent from the Wenkchemna Pass into the Opabin Valley was over broken rock and scree. Immediately below the pass stood a tall limestone pillar, serving as a good landmark where to turn upward on my return; for from this side the peaks of the watershed are merely a succession of tremendous walls, all looking about alike, so that it would not be difficult to confuse them.

As I advanced up the snow troughs by the side of the glacier's right lateral moraine, it was necessary to keep a continual look-out for 'shooting' gullies in the cliffs which covered the vicinity with débris.* At last I gained the glacier, and it proved quite free from crevasses.

It was only 9.30, and the sun's rays had not yet reached this part of the valley, so vast were the walls on either side. The névé was, therefore, coated with the morning crust, and as the slope was not steep, except near the top, I had no difficulty in reaching the summit of Opabin Col at 10 o'clock, 9,000 ft. above the sea.

Before me I saw a broad valley, destitute of vegetation, and walled on either side by lofty, precipitous cliffs, the glaciers at the feet of

* The largest rock-fall I saw in the whole region was upon the western side of Mount Neptuak, in the Wenkchemna Valley, near the bottom of the Wenkchemna Pass.

which resembled the dashing waves of a stormy sea. From my feet downward swept the névé, terminating in a fine glacier below, while two lakes appeared in the rocky valley, which, for the sake of uniformity, I have known as the Opabin lakes.

To the left of the col rose a gigantic peak, or, more properly, a 'peaked' wall, which bids fair to occupy a prominent place as regards altitude among the other mountains of the region, and when regarded from a climber's point of view is impassable from the N. side, unless it be possible to climb a wall. This peak, which I photographed from the top of Opabin Peak, a bit of stiff rock-work to the right of Opabin Col, and 9,400 ft. above the sea, I estimate to be about 11,700 ft., and I have called it Mount Biddle, after Mr. A. J. D. Biddle, of Philadelphia, an extensive and enthusiastic traveller.

I could obtain no definite information at this time concerning a possible pass into the Louise Valley, which I had hoped would be in evidence. The peak north of Opabin Peak I have named Mount Ringrose, after Mr. A. E. L. Ringrose, of London, an extensive traveller, and of great familiarity with the Rockies. It is the axis or pivot for two subordinate wings or ranges. To the west of the pass beyond the valley above mentioned was a range, topped by two handsome glacier-bearing peaks. Though at first I applied the names of Topham and Schaffer to these, yet, as being outside my immediate field of work, I have preferred to leave them unnamed, and have instead applied the names to high mountains near Mount Assiniboine in the summer of 1895. Through a depression in the ridge to the right were seen two great rock peaks of about equal height, one upon the watershed and the other connected therewith, being separated from the first by a notch or depression. The first of these I subsequently found to be Mount Green, the long white ridge at the head of Lake Louise, its precipitous walls on this, its southern side, containing practically no snow nor glacier, so abundant upon the northern face. The second or southern one I have named Mount Huber, after M. Emil Huber, of Zürich, who made the ascent of Mount Sir Donald, in the Selkirks.

And here I may as well say a word concerning the Temple-Lefroy question, which, no doubt, every visitor to Lake Louise has had occasion to discuss. Neither the railroad map nor Dr. Dawson's map places Mount Lefroy directly at the head of Lake Louise, but a little further to the E., and Mount Temple still further to the E. Those who read, in his delightful work, 'Among Selkirk Glaciers,' Mr. Green's account of his hurried visit to Lake Louise, and notice the cut of 'Lake Louise and Mount Lefroy,' are likely to regard the long white ridge which forms the background as being Mount Lefroy. As a matter of fact, one sees from the lake, slightly in the foreground, a fine, helmet-shaped peak, upon the left, whose western arête from the N. end of the lake is just seen outlined against the long ridge. This I had always known as Glacier Peak, the name given it by Mr. Astley, manager of the Louise Chalet, who always maintained that Mount Lefroy was the great helmet-shaped, ice-capped peak so well seen from Laggan to the S.E. The final solution of this question I

believe to be as follows:—A photograph in Dr. Dawson's 'Report' shows the general range of the Rockies from a ridge N.E. of Laggan. The peak in the centre of this, which he says he himself named 'Mount Temple,' is the ice-capped peak to the S.E. seen from Laggan, which I ascended from Wastach Valley. The 'conical' peak further to the right he says is Mount Lefroy. Now, by a close examination of the mountains in the foreground, I have identified Goat Mountain and the twin summits of Hazel Peak by their peculiar shapes. Immediately back of this rises the peak which he calls Lefroy. The appearance of this peak is exactly that of the peak south of Hazel Peak, and indeed, as the picture shows, it can be no other. This is the peak which Mr. Astley calls Glacier Peak. It is in reality Mount Lefroy. I have photographed it from the top of Hazel Peak and from the great *névé* plateau on the right and below the long white ridge seen from Lake Louise. There ought to be no further confusion between Mounts Temple and Lefroy.

The bearing of this upon the peak Mount Green is as follows:—The identification of these two mountains left the long white ridge* back of Lake Louise without a name. Several were suggested, but I

* My friend W. D. W., in a contour map of the Louise basin, has further complicated the affair by seemingly calling this ridge 'Mount Lefroy,' though adopting Dr. Dawson's 'Mount Temple.' The latter peak, others have informed me, was to them known, 'in the days before maps,' as 'Mount Lefroy.' Another still, one of the extensive travellers in the Rockies, believes that 'Mount Lefroy' is across the watershed, possibly identifying it with my 'Mount Biddle' or 'Mount Huber;' while, from certain passages in Mr. Green's work, which, on the authority of Mr. MacArthur, seem to indicate the *Vermilion Pass* as the way of approach to its easy eastern side, my 'Mount Heejee,' or 'Mount Fay,' or any one of the 'ten peaks' might be inferred to be Mount Lefroy—a total of fifteen possible 'Mount Lefroys.' Mr. Green himself evidently indicates the white ridge S. of the lake as 'Mount Lefroy,' although, indeed, when he says, 'The great precipice of Mount Lefroy stood up in noble grandeur; a glacier *sweeping round its foot* came right down to the head of the lake,' he could as easily be regarded as referring to the real 'Lefroy' round the corner—that is, to the left, in the foreground. While agreeing with Mr. Green that Mount Lefroy is at the 'head of the lake,' we must remember that the latter gentleman is speaking only in general terms, and was at the time of his brief and stormy visit unaware of the narrow Death Trap Valley and Col, which separate those two distinct peaks 'at the head of the lake,' of whose general mass he spoke as 'Mount Lefroy.' While not wishing to dogmatise when high authorities seem to differ, it seems to me that Dr. Dawson's map, being the first general one of the chain, and his nomenclature having been doubtless adopted in the light of *all* available information, should, as in all other cases, be regarded as decisive, particularly as one of the peaks in question was given its name by him. Since Mr. Green was the first to describe it, it is eminently fitting that that white ridge S. of the lake (and separated from Mount Lefroy by the narrow Death Trap Valley, and connected with it by the col of the same name) should bear his name, to say nothing of the obligations due to him as the 'pioneer' of the Selkirks. The chief reason for the continuance of the misunderstanding is the constancy with which Mr. Astley, manager of the chalet, in opposition to Dr. Dawson, applies the name of 'Lefroy' to 'Temple' and of 'Glacier Peak' to 'Lefroy.' A 'fixed' terminology is desirable principally to avoid confusion.

have known it as Mount Green, in honour of the one to whom we are indebted for introducing us to the Selkirks. And the twin peak to the S. I mentioned on the other side of the watershed, separated from Mount Green by a notch or depression, I have, as mentioned above, called Mount Huber after M. Emil Huber, of Zürich, who succeeded in climbing Mount Sir Donald at Glacier. The heights of Mounts Green and Huber I estimate at 11,700 ft.

I photographed the surroundings, descended the peak, *névé*, and glacier leisurely, and was travelling along one of the snow-gullies by the old moraine. On reaching the top of a rise of rock, I looked down upon a herd of eleven goats lying or standing upon the snow not 20 ft. away. They did not remain long, but the narrative made H. wish he had seen them.

I watched the goats as they climbed the snow-slopes, waiting their turn to get upon the cliffs, and making ample allowance for stones dislodged by their brethren, until the last had disappeared over the Wenkchemna Pass. Then I began to ascend slowly, as the sun was hot, and there was no water upon this side of the pass. I had completed about three-fourths of the ascent, and was resting among some large boulders, when, attracted by falling stones, I espied two yellow objects circling the ledges to my left. My glass revealed two silver-tip bears, who, scenting me, stopped to investigate. I did not move, and, finally, perhaps alarmed, they turned around and were soon out of sight around the corner.* I then lost no time in crossing the Wenkchemna and Wastach Passes to the tent, and next day (Sunday, August 12) returned to Lake Louise.

Monday we ascended Mount Piran, and on Tuesday F., W., and I made an expedition up the Bath Creek. This stream flows from the N.W. into the Bow River, from that large glacier with the fan-shaped ice-fall seen in the distance from Laggan. This glacier is upon one of the Waputtek group of mountains, which are as yet unexplored in detail. My object was merely to investigate the group from one of the nearer peaks.

We were taken up as far as the Bath Creek on a hand-car, which was to meet us at six in the afternoon, and followed an old logging trail for a mile or so, and when it failed we took to the river flats and then to the thick timber. About 4 miles above the railway the stream forked, and following the right branch we then ascended for an hour through the thick forest. Emerging thence, we climbed slopes of sharp broken limestone, requiring the use of gloves. At a point 200 ft. below the summit, W. and I set up our cameras; but F., freed from such encumbrance, proceeded to the top.

The view to the E. was obstructed by our peak, but the whole Lefroy group was seen from top to bottom. Mount Temple was furthest to the E., while further to the W. the ice-capped summit of

* There is, however, a possibility that they were unusually large goats, whose resemblance at a distance to bears in appearance and movement is well known.

Mount Lefroy, and Mount Green with its great ridge here seen in profile, rose like a needle, while around them clustered the lesser peaks. This was my first, and indeed my only, view of this group from an outside point of any elevation. The whole scene was softened and mellowed by the blue haze.

Nearer to us, just across the Bath Creek Valley, was the long, flat peak with its fan-shaped ice-fall, seen from Laggan. This fall descends from a long, flat glacier above to a similar parallel one below. The latter was very long and disappeared through a depression to the N.W., where it formed the sky-line. Further to the N. the distant peaks of the Waputtehk group appeared, inviting exploration. The foreground of the group, an artistic contrast of valley and glacier and rock, relieved by nearer snowfields, was singularly attractive. The point on which we stood was 8,600 ft. above the sea.

We saved several miles of forest by descending to the S., and arrived ahead of time at the appointed place. A rapid ride on the hand-car to Laggan, during which I was in great fear of meeting a freight train, closed this pleasant day.

Devoting next day to rest, writing, and needed repairs, we left on Thursday, August 16, with horse and provisions for camp. We tried the E. bank of the Wastach River, but the pack was loosened at least a dozen times in the dense woods, while the horse, sinking through the moss into concealed holes, became almost unmanageable, and we barely reached the tent by nightfall.

I called W. and F. at 5 o'clock next morning (Friday), for we were to try the ascent of Hazel Peak, reserving Mount Temple for Saturday. Crossing the two streams on logs, we ascended the bed of a small stream between two great buttresses of quartzite. Above these, at an elevation of about 8,200 ft. above the sea, came slopes of broken limestone. Our reaching the top of Hazel Peak depended upon our ability to connect with a slope on the other side, extending to the top, but inaccessible from the Louise Valley. The existence of a 'step' or perpendicular cliff at the top and to the right of the long limestone slope above us rendered such connection a matter of conjecture.

Near the base of this slope W. found some scattered trilobites, and soon I picked up some more. No bed, however, could be discerned, though we searched for it at the time and upon our return. Upon reaching the top of the long slope, a steady pull of over 2,000 ft. from the valley, a superb view greeted us. To the W. lay the Louise Valley, beyond which Mounts Whyte,* Despine,† Nichols,‡ and Green loomed weirdly through the hazy atmosphere. The upper portion of Mount Lefroy with its glacier walls seemed very near,

* Named previously after Superintendent Whyte, of Winnipeg.

† Named after my friend and former companion on the Matterhorn, M. E. d'Espine, of Geneva.

‡ Mount Nichols, N. of the notch, which I named after my friend and companion on Mount Fox in the summer of 1893, Rev. H. P. Nichols, of Minneapolis.

across the narrow valley of the Mitre Glacier. The slope we desired was easily attained by continuing to the right on the W. side of the arête, and we easily reached the summit, 10,400 ft. above the sea.

Here we remained 1 hr. The haze rendered photography useless for the distant peaks, many of which were faintly visible. On a clear day this point would, in my judgment, be the finest scenic point in the whole group, not excepting Mount Temple, which is itself such a magnificent feature in the panorama. The northern slopes of Hazel Peak bear a large glacier, well seen from Goat Mountain, which descends from the two peaks forming the summit. We were upon the southern peak, the higher of the two, and the cairn which we built was well seen from the trail to Lake Agnes. We accomplished our descent to camp without difficulty, arriving at 4 o'clock, a total time of 9 hrs. The time could easily be shortened to six.

(To be continued.)

THE DESCENT OF GAPING GHYLL (YORKSHIRE).

A STORY OF MOUNTAINEERING REVERSED.

By E. A. MARTEL.

THOUGH I have been acquainted with the glaciers of Chamonix ever since 1864 (when I was only five years old), though I have travelled more than twelve times through the Alps 'from end to end' between Vienna and Nice, and though I am passionately fond of this most magnificent 'playground of Europe,' yet it has been my misfortune to be able to make but a few important mountain ascents, none of which were more difficult than the Aiguille du Goûter and the Aiguille d'Argentière, both in the chain of Mont Blanc.* Further, when in 1887 I was able, as I had long desired, to climb high peaks, it happened that I had already been fascinated (since 1883) by a region in my own country which was full of mysteries and unknown beauties. The cañons of the Causses in Southern France led me to real discoveries, and I found such great enjoyment in their hidden and beautiful scenery, that I was led to believe that the Alps themselves had been too much explored. Moreover, after 1888, when I first began to look into the interior of the earth, through the dark mouths of tremendously deep chasms and abysses, or through the untrodden vaults of caves, as immense in point of size and as richly ornamented as those in Austria, such a wide field of scientific investigation opened out before my eyes that I could not resist the temptation of exploring it as thoroughly as possible. Thus for seven years (1888-1894) my time was fully

* See my articles in the *Annuaire* of the French Alpine Club for 1882, 1887, and 1894, and also *Le Massif de la Bernina*, by A. Lorria and E. A. Martel. Zürich: 1895.

occupied by these underground researches in France, in Belgium, in Austria, in Dalmatia, and in Greece. The results of my explorations, as well as an account of the scientific problems that I had succeeded in solving, and of the unexpected natural curiosities that I had discovered, have been fully described in my large books, 'Les Cévennes' (Paris, 1890) and 'Les Abîmes' (Paris, 1895).

On the occasion of the sixth International Geographical Congress in London last summer I delivered a lecture, in which I pointed out the way in which the science of cave-hunting, or 'speleology,' might be further developed. I explained how the methods of cave-hunting could be greatly improved and extended, so as to be the means of bringing about many more curious discoveries, particularly by the systematic examination of 'swallow holes' and abysses, and I pointed out that cave-hunting might become, like 'limnology' and 'oceanography,' a distinct and independent science, by reason of its special objects and the great number of questions which it helps to answer.

I therefore profited by my presence at this Congress to carry out my eighth annual underground exploration in Great Britain itself. Having received a mission from the French Ministère de l'Instruction Publique, and having had much information courteously supplied to me by Professor Boyd Dawkins, Mr. Mark Stirrup (of Manchester), Dr. Scharff and Mr. Jameson (of Dublin), and Mr. Plunkett (of Enniskillen), I was fortunate enough to make some real discoveries and many new observations in the caves, swallow holes, chasms, and subterranean rivers of Ireland, Derbyshire, and Yorkshire. A detailed account of my doings and a comparison of their results with those of my former explorations will appear in the course of the present year in a new book which I am engaged in preparing. It will prove that the important researches and daring deeds of Messrs. Lloyd (1770, in Eldon Hole), Birkbeck and Metcalfe (1847, in the Yorkshire pot-holes), and Boyd Dawkins (1860 and later, in the Mendip Hills) need to be repeated and carried out on a wider scale. I have made it clear that Underground England and Ireland are still far from being thoroughly known, and that future cave-hunting, with all the improvements that I have introduced (telephones, long rope ladders, folding canvas boats, &c.), will be the means of bringing to light many novelties, whether from the scientific or the picturesque point of view. In the present paper I will merely endeavour to show that speleology, though played on a darker scene, is as rich as mountaineering in difficulties, perils, and romance.

I cannot help wondering why so many active, enterprising, and brave young Englishmen have hitherto refrained from exploring these unseen depths, which appeal so mysteriously to the imagination, and specially to the desire to increase the sum total of human knowledge. Many persons complain that European mountains are exhausted, so far as exercise and sport are concerned. But let them change this wish to ascend into a wish to descend, and many years

will elapse before they have exhausted their own 'dark playground of Great Britain.'

The most interesting descent I made in the course of my journey last summer was that of Gaping Ghyll (Yorkshire) in Ingleborough Hill, and it is that which I shall select as the best example of 'mountaineering reversed.' Allum Pot had been already descended in 1847, 1848, 1870, by Mr. J. Birkbeck, Mr. Metcalfe, and Professor Boyd Dawkins,* and its mouth is larger than that of Gaping Ghyll, though the latter is deeper, for in 1872 Professor Hughes measured it and found the depth to be 390 ft. For many generations this awful pit was feared by man. It was thought that the Fell Beck (which flows into it) ran—

Through caverns measureless to man,
Down to a sunless sea.

Mr. J. Birkbeck, having long heard the roar of this cataract, tried about forty years ago to find out what Gaping Ghyll concealed. He descended it only in part, to the depth of 190 ft., at which point his further progress was arrested by the rushing water and his insufficient apparatus. Since that time no one has ventured to plunge again into this gulf. Professor Hughes's plummet alone revealed its depth, and the fact that it was full of water.†

On August 1, 1895, I arrived on the spot armed with all my apparatus. I cast down the hole my long rope ladder, and fastened it very strongly to an oaken post at the edge of the pit, driven into the grassy bog on the slope of Ingleborough. Mr. J. Farrer, the lord of the manor of Ingleborough, had been kind enough to cause, during the three previous days, the course of Fell Beck to be diverted as much as possible. Very heavy rains at the end of July had made the stream very strong, and without Mr. Farrer's most valuable assistance neither Mr. Birkbeck nor myself could have carried out our project. The whole of the beck was not done away with, but it seemed quite possible to stand what still remained of it. My wife stood at the mouth of the pit, in charge of the upper end of the telephone, while I was to take down with me the rest of the machine. No windlass was employed (I only used such things in 1888 and 1889, on my early descents), for I always descend by the ladders, having first secured round my body (in a peculiar way, so as not to run the risk of being squeezed) ‡ a rope which is held (in order to be lowered or pulled up as the case may be) by five or six men stationed above ground. In this way I enjoy greater liberty, and can rest when I like on any part of the ladder. This plan is also the safest, for at any time an accident might happen to the windlass. As none of my usual companions were with me, and there was no one present who was familiar with such explorations, I had to prepare everything myself,

* See the latter gentleman's *Cave-Hunting*. London: 1874. Pp. 46 sqq.

† *On Caves*. Proceedings of the Victoria Institute. London: 1887.

‡ See *Les Abîmes*, p. 17.

leaving not a single detail to others. In particular, I tested every rope and knot most carefully (not Manila Alpine rope, which is far too thin, but my own hemp rope, two-thirds of an inch thick).

As I had brought with me from France a rope ladder of only 270 ft. in length, I had to go down about 60 ft. of doubled rope before I gained my ladder. It was necessary to arrange thus, so that if I was tired near the bottom of the pit I might rest on my ladder. Otherwise, if I had used the rope when far down I should have had to trust to my arms and legs, and my strength would by that time have been more or less exhausted.

My preparations lasted about three hours. Then, with about eighty spectators to watch my disappearance, I started on my descent at 1.22 P.M. This did not prove as difficult as I had feared, for the rope and the ladder rested against the sheer rock, and did not swing at all. I had only to dislodge with my hands and ladder a few loose stones, which might later have fallen on my head. I did not require any candle, for daylight penetrated quite to the bottom. This was most fortunate, as no lantern or electric lamp would have resisted the half-suffocating whirls of air and water which rushed and dashed through the pit, here from 10 to 16 ft. wide. This was the only inconvenience I experienced during my whole undertaking, but it was most disagreeable, and much disturbed my conversation through the telephone. I was wet through and half crushed by the waterfall, which came down perpendicularly upon me, so that I was glad enough to land, and to find some shelter on a ledge (12 ft. long, and 6 ft. wide) at a depth of about 190 ft. This is certainly the spot at which Mr. Birkbeck was stopped. In the case of future explorers unprovided with telephones, the best way of communicating with the surface will be to station a companion on this ledge, as he will act as 'voice bearer,' being pretty well heard both from below and from above. Beneath this ledge the pit contracts to a width of 7 or 8 ft. On the ledge I found the bottom part of my ladder (140 ft.) coiled up in one huge heap. A few minutes sufficed to unroll it, and to throw it down into the yawning and narrow gulf. Then I resumed this amazing descent, with the thin veil of a cascade falling perpendicularly from a height of 200 ft. above. Such things I have never admired in the Alps.

After a further descent of about 50 ft. I and the ladder began to swing in the air and in the water, and the rocky walls around seemed to retreat, for I was just emerging from the roof of a gigantic cave. After a long and tedious halt and dangling in the midst of this waterfall in order to allow my rope to be lengthened by another *upstairs*, I reached (at 1.45 P.M.) the end of the remaining 100 ft. of the rope ladder. The last rung was within half a foot of the ground, so precise and accurate had been Professor Hughes's plummet and my own.

I despair of giving my readers any idea of the view on which I gazed as I stood at the foot of my ladder, and at a respectful

distance from the waterfall. There were no stalactites or sparkling diamonds of carbonate of lime to be seen (the cave is too frequently filled with water for that), but an immense cathedral, unsupported by a single pillar. There was one vast hall, 500 ft. long, 80 to 100 ft. high, 66 to 116 ft. broad. Thus it is one of the five or six largest caves known at present to exist in the whole world, and the scene ranks among the most impressive that I ever expected to come across in my underground wanderings, particularly by reason of the fantastic dropping of water, and the darting of the daylight through the funnel in the gigantic vault. No sound from the surface of the earth can penetrate to this spot, for the roar of the waters is too great to allow of that. The floor, covered with sand and pebbles, is almost level. The two ends of the cave are unfortunately blocked by boulders (15 to 20 yards long and high—they are included in the estimate of the total length at 500 ft.) which have fallen from the roof. Through the sand and tiny crevices the water percolates in the direction of the well-known Ingleborough Cave, which is only a mile distant and 150 ft. lower, and whence issues Beck Head, the source of the Clapham Beck, and certainly the outlet of Fell Beck, which descends through Gaping Ghyll. I ascended the S.E. slope of boulders, and, at its summit, through the joints of great stones, I heard the roar of a stream on its way to Ingleborough Cave. There was a draught of air, but I cannot say whether it came from beyond the boulders or from the large cave, because of the air whirling round the waterfall. By clearing out these boulders (a good piece of engineering work) it might be possible to discover other large caves connected with the one I discovered and with Ingleborough Cave itself. Being quite alone in this damp dungeon I could of course make no attempt of the sort, and, as I was wet to the bone, I did not care to mount the N.W. slope of boulders; but that too seemed to be blocked right up to the roof, though on its left is a small passage, choked with sand. So I contented myself during my stay of $1\frac{1}{4}$ h., with mapping the cave, and with taking geological and meteorological notes (published in the "Comptes Rendus de l'Académie des Sciences de Paris," January 6 and 13, 1896).

At 3.5 P.M., filled with regret at leaving so majestic a scene which I had been able to admire for so short a time, I began the ascent, which took 28 min.—a little longer than the descent—and was far more laborious. My telephone was filled with water, so that I could hear nothing from above, though my wife, on the contrary, heard through it my orders and my shouts. In the middle of the pit the telephone wire broke into two parts, having coiled round a sharp point of rock or got entangled with the ladder, as the men above pulled it too hard. Luckily I was then within reach of the voice, and could talk in the free air. When I issued forth from the pit I was quite sallow, and breathless from cold and wet.

On the whole my excursion down Gaping Ghyll would have been quite easy had it been possible to divert the whole of Fell Beck.

The hole itself is one of the finest (though not one of the deepest) that I have ever visited, and daylight penetrates to the very bottom. The large cathedral cave acts as a reservoir to Clapham Beck, and so is very interesting and important.

I dare not hope that I shall ever have another chance of going down grand Gaping Ghyll, but I hope most sincerely that the Leeds gentlemen (Messrs. Calvert, Booth, Gray, Green, Bellhouse, &c.), who since my descent have been twice hindered by rain from repeating it, may succeed as soon as possible, not merely in order to confirm my report, but also to remove the boulders which stopped me, and so to discover the other caves which certainly exist there. To accomplish this a large party must be lowered down.

All round Ingleborough, and in many other parts of England and Ireland, there are many such pot-holes, well worthy to excite the curiosity and stimulate the boldness of the most capable and hardy Alpine climbers. To these I would venture to say, 'Try mountaineering reversed for once.'

THE RIDGE CONNECTING THE M. VÉLAN AND THE GRAND COMBIN.

By ALFRED G. TOPHAM.

BOTH the Italian Government map and the more recent sheet 592 bis of the Swiss map are terribly mixed in the nomenclature of this frontier ridge. In the scheme below I have endeavoured to put matters straight. The ridge, which is mostly very jagged, is very conspicuous from the south side of the Col de Fenêtre. It is also seen, though much dwarfed by its big neighbours, from Aosta, and from the Lac de Champex, and I have distinguished the Lake of Geneva from one of the summits. On the west side the cliff which cuts in two the Sonadon Glacier is carried right across the face of all the aiguilles, and it is only after gaining the Col de Valsorey, and from the upper névé of the Sonadon Glacier, that any approach can be made to the frontier. Several years since I attempted an ascent from this side, but the formidable lines of precipices one above another turned us back, and drove us another year to the east side. From the Vélan to the Col de Valsorey this side is composed of steep though broken-up rocks, but on touching the Trois Frères this is altered. On the lower slopes most uncompromising *plaques* are encountered, surmounted by the tall, thin aiguilles; but from Mont Percé onwards a narrow, easily gained snow-field lies high up at their feet.

In the following list the first column contains the recognised names of the summits and cols, in proper order; the second column the inadequate and often wrong nomenclature of the Swiss map; the third that of the Italian map, and the fourth details of ascents.

Table of Summits, &c., from M. Vêlan to the Col du Sonadon.

Correct Names	S. Map	I. Map	Remarks and First Ascents
Tête d'Ariondet . . .	—	—	C. G. Monro and O. G. Jones 'A. J.' xv. 545 'A. J.' xvi. 361
M. Capucin	3,467 m.	3,406 m.	C. G. Monro and O. G. Jones 'A. J.' xv. 545
Col des Chamois	—	—	—
M. Cordina, or Tête de Cordon (1)	—	—	Walter Leaf and G. W. Prothero 'A. J.' xv. 544
Col de Valsorey	Col des Chamois ou de Valsorey (3,113 m.)	3,087 m.	C. E. Mathews and A. Reilly 'A. J.' ii. 364 'Boll.' v. 52
Les Trois Frères	M. Capucin (3,270 m.)	M. Cordina (3,269 m.)	A. G. Topham 'A. J.' xvi. 515 'A. J.' xv. 359
Aiguilles de Valsorey (2) Gran Carré (3)	— Les Trois Frères (3,248 m.)	—	—
Mont Percé (4)	Le Tunnel	M. Percé (3,262 m.)	A. G. Topham 'A. J.' xvi. 515
Aiguilles de Luisettes (5)	Aiguille de Luisettes	M. Tre Fratelli (3,418 m.)	E. Carr 'A. J.' xv. 261, 301, 302
Col de Luisettes	—	—	E. Carr 'A. J.' xv. 261, 301, 302
West Aiguille Verte de Valsorey	Aiguilles Vertes	—	—
Col Vert de Valsorey	—	—	W. M. Conway and F. M. Davies 'A. J.' xv. 261, 301, 302
East Aiguille Verte de Valsorey	3,503 m.	3,467 m.	E. Colomb and L. Kurz 'Echo des Alpes,' 1887, 197-212
Col d'Amianthe (6)	—	—	'Echo des Alpes,' 1887, 206
Amianthe	Amianthe and Gran Testa di By (3,600 m.)	Gran Testa di By (3,584 m.)	H. V. Reade and T. H. Dickson (7) 'A. J.' xviii. 48 Ratti and Casa- nova, 257 'D.u.Oe.A.Z.' 461

(1) That the first climbers of the Capucin and Cordina were much confused by the existing information is seen by the two entries in the 'Journal' and the accompanying note. Both parties give to the summit immediately S.W. of the true

Col des Chamois the height of 3,467 m. or 3,406 m. These heights on the S. and I. maps are rather in the position of where the Ariondet is situated, but it is probable that the cartographers meant these heights to apply to the more conspicuous Capucin.

(2) A three-headed peak. The whole ridge used to be known by this name, but it is best restricted to this group.

(3) This summit is really the flat-topped extreme N. end of the Trois-Frères Aigs. de Valsorey group. It is hardly worthy of a name, but is known to the guide Balley as *M. Carré*.

(4) The position assigned to *M. Percé* by the Italian map is correct. It is immediately N.E. of a snowy depression, and not where placed on the latest edition of the S. sheet. On the latter it should be exactly over the L. of the wrongly placed Les Trois Frères. The older edition gives a height 2,827 m. as the correct position for the Percé, but these figures are probably meant for the height of the snowy depression. *M. Percé* is also sometimes called the Fenêtre de Valsorey.

(5) This being also a three-headed peak will account for the wrong name on the I. map, and the position of the name on the map points to the most easterly of the three. All three summits were ascended.

(6) This pass is wrongly called the Col de l'Aiguille Verte de Valsorey in the 'C.P.G.' The col was reached from the N. by E. Colomb and L. Kurz, but they did not descend the Ollomont by it.

(7) There seems to be no recorded ascent previous to the one here given, which was made on August 26, 1895, a large cairn being then found on the summit. It is a snowy summit rising out of the great Durand Glacier immediately S. of the Col de Sonadon, and is also sometimes known as the *M. Sonadon*.

If the above scheme is not perfect it will serve as a 'point de départ.'

ALPINE NOTES.

THE BIRRENHORN, BIRRE, OR BIERENSTOCK. *September 18.*—A direct route up the S. face of this little peak (2,511 m.), differing somewhat from that described by Mr. Wherry in the last number of the Journal,* was found by Messrs. H. V. Reade, T. H. Dickson, and C. S. Ascherson (without guides), who were ignorant of the details of the former ascent. The foot of the rocks at the W. end of the S. face, which are about 650 m. in height, was reached in 2 hrs. from the Hôtel Victoria at Kandersteg by zigzagging up the grass slopes above the chalets of Hubeln; then Mr. Wherry's couloir was taken to, but, instead of quitting it by the traverse 'to the W.S.W. as far as some little pine trees,' the party followed it to the top. It is broken by pitches of varying steepness and difficulty, and ends in a fine vertical chimney about 60 feet high, blocked at the top by a large boulder, forming a cave, from which a difficult and, for the leader, somewhat risky exit is made by working through a narrow rift and climbing the left wall of the chimney. The top of the ridge is then reached some way to the E. of Mr. Wherry's 'Fenster.'

* *Alpine Journal*, vol. xvii. p. 600.

This climb is well worth doing on a day when weather is doubtful, as it can be found even in clouds. H. V. READE.

[We are informed by Herr A. Bernouilli (of Bern), that he made the ascent of the Birre by the S. face on June 17, 1894, with Jacob Reichen, and that, as far as he is aware, the climb had been but once previously made—viz., by the guides Jacob Reichen and Fritz Ogi, of Kandersteg.—*Editor A. J.*]

AVALANCHES IN THE 14TH CENTURY.—The following vivid and curious detailed descriptions of avalanches in formal documents of April 18 and 25, 1302, are worth reprinting here, as such full accounts are very scarce in mediæval times. They are taken from vol. i. (Lucerne, 1835) of J. E. Kopp's 'Urkunden zur Geschichte der eidgenössischen Bünde,' pp. 54-6. In the first, Bishop Henry of Constance, agrees to erect the village of Morschach, above Brunnen, on the Lake of Lucerne, into a distinct parish, as avalanches frequently cut the inhabitants off from their mother church at Schwyz. In the second, King Albert, of Habsburg, graciously confirms this creation of a new parish.

1. 'Horridam et execrabilem cladem Lowinarum cacumina montium et profunditates vallium quando veniunt conmoventium quis poterit enarrare? Ipsae, fragore fulmineo a summo descendentes et quaeque obstantia funditus evertentes, etiam concutiunt montium fundamenta, et crinis furiis non solum quaeque ipsis perimunt, sed, terram profundius sulcantes, etiam post ipsarum transitum lowinarum itinerantibus inviam terram reddunt.'

2. 'Quod cum venerabilis Henricus Constantiensis Ecclesiae episcopus, Princeps noster dilectus, boni more Pastoris, prudenter considerans et attendens pericula, quae ex vehementi et furioso impetu Lowinarum, in profunda convallium, a praeruptis montium cacuminumque horrendorum declivitatibus, inter ecclesiam parrochiam in Switze et capellam in Morschach, tempestate surgente, vel gravitate nivium resolutâ, improvise irruere frequentius consueverunt, mole suâ obstantia quaelibet opprimendo, viarum obruendo vestigia, et nonnunquam ibidem transeuntibus subite interitionis angustias miserabiliter inferendo, homines illos quos in transitu suo ad ipsam ecclesiam eadem turbare possent pericula, cum eorum terminis infrascriptis, a subjectione praedictae parrochialis ecclesiae in Switze, auctoritate ordinariâ, de consilio provido et salubri, pro securitatis opportune commodo, duxerit eximendos; Indulto eisdem, ut deinceps in capella Morshach, tamquam in ecclesiâ parrochiali et per se stante, sub certis redditibus, proprium habeant sacerdotem.'

COMBIN DE CORBASSIÈRE.—Two of the ordinary routes up this mountain (3,722 m.) do not appear in the 'Central Pennine Guide.' The first differs from route (2) of the 'Guide' in that the S. face is climbed from the glacier N. of 3,437 m., instead of the S.E. arête. The face seems practicable anywhere, but the rocks are too broken and easy to be interesting. The second route avoids the rocks altogether, except for the last little bit. Ascend the strip of glacier between the two rock ridges ending in 3,153 m. and 3,437 m. re-

spectively; then turn W. and N.W., circling round the rocks, on easy glacier, until the ascent can be made from the W. up snow-slopes just N. of the rocks, under the word Combin on the Siegfried map.

H. V. READE.

TOURNELON BLANC.—On an ascent of this peak (3,712 m.), via the Mulets de la Liaz,* a way was made through the séracs somewhat S. of the route taken on the first ascent, as the snow slopes there described had given place to hard ice. The snow hump (3,695 m.) was skirted on the E., as there seemed to be no object in going over it. The ascent of the Tournelon Blanc seems to be made very rarely; but it is strongly recommended as far more interesting than the stock climb from the Panossière hut, the Combin de Corbassière. Time, about 4 hrs. from the Panossière hut.

H. V. READE.

MAUVOISIN NOTES.—The path from Mauvoisin to the head of the valley now keeps on the *left* bank of the river the whole way until the last bridge (for Chanrion), and one cannot cross and recross, as shown on the S. map, since the bridge marked just N. of point 2,002 m. no longer exists. A mistake here is serious, for if one has gone over to the *right* bank it is impossible to cross the stream coming from the Glacier de Breney without wading. To reach the Zessetta Alp one does not, as stated on p. 17 of the 'Central Pennine Guide,' go *down* the valley from Mauvoisin, but up it, by the ordinary path, for about twenty minutes. The Zessetta path diverges to the right at the first of three enormous boulders.

H. V. READE.

THE COL DES FOURCHES.—On p. 48 of the last 'Journal' it was stated in error that Michel Charlet is said to have crossed this pass in 1838; but, as is expressly noted in both editions of M. Kurz's 'Guide,' Charlet in 1838 probably followed precisely the route of Forbes in 1850—*i.e.* did *not* cross this col. Hence the 1895 traverse is the first known to have ever taken place.

WINTER ASCENTS.—We have received from Mrs. Main the following interesting details of her recent splendid winter climbs:—
'On February 16 Mrs. Main, with Martin Schocher and Christian Schnitzler, having gained the Forno hut in 3½ hrs. from Maloja the day before, started for the *Monte della Disgrazia* at 3.15 A.M., and got to the top of Monte Sissone at 5.40 by lantern light. The tracks thus far had been made on the previous day by a couple of porters. The weather was windy and cloudy, but not cold. After a wearisome descent of 2,000 ft. on the Italian side, during much of which step-cutting was necessary, the party skirted on good snow the various peaks between the Sissone and Disgrazia. Reaching the upper plateau of the Sasso Bissolo glacier, it became evident that the strong wind on the *arrête* and the ice rendered that route an unfavourable one. They therefore ascended straight up the rocky S.W. face, finding good snow and dry rocks, direct to the hut near the summit. From here, in the teeth of a gale and

* See *Central Pennine Guide*, pp. 16, 17.

driving snow, the top of the Monte della Disgrazia was reached at 10.35 A.M. The Forno hut was regained the same evening at 6.30. This is the first time the Disgrazia has been ascended in winter.

‘On February 19 the same party, with the addition of Mr. A. Dod, made the first winter ascent of *Piz Zupo* in 5 hrs. 15 min. from the Boval hut. They were much assisted both by their own tracks on their ascent of the Crast’ Agüzza and by those of a party who had attempted Piz Zupo the week before, but had been turned back by the cold.

‘On the 22nd the same party and Miss Pennington Legh made the first winter ascent of the *Drei Blumen*. On this occasion they were more inconvenienced by the presence of some winter snow than had been the case on any of the higher mountains.’

The Jungfrau was traversed on February 19–20 by Herr Charles Flach and Mr. Steane Price, with Christian Jossi and his son. Starting from the Guggi hut at 3.30 A.M., it was not till 2.40 P.M. (in a snow storm) that the party succeeded in gaining the Silberlücke. The upper glacier was attained at 7 P.M., and it became necessary for the adventurers to spend nearly 12 hours under the overhanging edge of a crevasse, 40 min. below the summit of the Jungfrau. That peak was reached next morning, but the usual route down (over 7 hours having been consumed in cutting down to the Roththal Sattel) was in so bad a state that the Bergli hut was not attained till 8 P.M. that evening. Herr Flach has published a full account of his expedition in the number of the ‘*Volksbote*’ (the new weekly paper printed at Grindelwald) for February 26, 1896. This expedition is far too long for a winter climb, and while admiring the pluck of the climbers which carried them through many unpleasant experiences, we may be allowed to hope that they will find but few followers on a route which even in the height of summer is long and arduous.

THE FLORA OF COGNE.—The ‘*Rivista Mensile del C.A.I.*’ for March 1896, pp. 88–90, contains some notes on the Cogne flora, by Sig. F. Santi, which will be found very interesting to plant-lovers visiting the district.

‘THE EXPLORATION OF THE CAUCASUS.’—Mr. D. W. Freshfield’s book under this title has been delayed by technical difficulties, but is now in the press, and will be published very shortly. It contains 74 photogravures, 3 panoramas, about 140 illustrations in the text, and 4 maps. Chapters are contributed by Mr. H. Woolley, Mr. Cockin, Mr. Holder, M. de Déchy, and Professor Bonney.

REVIEWS AND NOTICES.

Zeitschrift des Deutschen und Oesterreichischen Alpenvereins. Vol. xxvi.

THIS volume (perhaps to celebrate the twenty-fifth anniversary of the club’s existence) has blossomed out into a larger size, almost a quarto. At this rate after the next fifty years it will become a

folio. Beginning in 1862 with a couple of modest duodecimos, it grew in 1864 to an octavo, and so remained until now. The present enlarged size is not nearly so convenient to hold. It contains, however, much interesting reading. Herr L. Purtscheller and Dr. Blodig contribute a number of interesting excursions without guides in the Maurienne and Tarentaise. On July 23, 1893, they succeeded in climbing the Southern Aiguille d'Arves, where Herr Purtscheller, with Herr Schulz and Herr Kellerbauer, had failed in 1885. The frontispiece, from a painting by E. W. Compton, gives a vivid representation of the 'Mauvais Pas.' Mr. Norman Neruda gives an interesting account of the different routes up the well-known Fünffingerspitze. All of these he has traversed on one occasion, alone. The climb, by all the routes, is one of exceptional difficulty, and for this very reason he thinks it will become a 'Modeberg,' which mountaineers sufficiently active, but not experienced, will ascend with good guides, to get the credit of having been up, though they were hauled up like sacks over the bad places, or told at every step how to move in order to reach the hand- and foot-holds. Herr Ernst Platz has devoted much time to the portion of the Karwendel group, immediately N. of the Vomperloch, near Schwaz. The ascents are not new, but there are many interesting traverses. The climbing resembles that in the Dolomites, but the scenery is not so attractive. Herr M. von Prielmayer describes the topography of the Granatspitze group. This lies to the W. of the Gross Glockner, from which it is separated by the Kalsler Tauern. The article is, in fact, a 'climber's guide' to the group. Herr Frido Kordon, with various friends, made a number of excursions in the Malteinthal. Of these the ascents of the Zaubererneck (2,941 m. = 9,648 ft.) on the S.W. side, and of the Schwarze Schneide (3,068 m. = 10,115 ft.), a neighbour of the Hochalmspitze, were new. On this last peak, the highest of the group, he spent a very uncomfortable night in an improvised bivouac, with a friend who was anxious to complete a panorama from the summit. Herr Hans Wödl adds a fifth and concluding chapter on the mountains of the Lesser Tauern, thus bringing his account to their eastern boundary, where the railway between Admont and S. Michael passes along the Palten and Liesing valleys. Dr. Carl Diener takes us to the Central Himalayas of Kumaon and Gurwal. The expedition was made more in the interest of geology than of mountaineering. On the Utadhura Pass (17,590 ft.) he felt the effects of the rarefied air so severely that he had to stop every three or four minutes to take breath. One of his companions (Herr Griesbach) had to be supported by two coolies up the last 300 ft., whilst the third (Mr. C. S. Middlemiss) felt only a slight headache. After some practice these sensations are no longer felt, for Dr. Diener a few days later ascended Kungribingri (19,170 ft.) from the camp (over 17,000 ft.) without feeling any inconvenience, though having to struggle through fresh snow and against a high wind. In 1883 Mr. W. W. Graham reached, on Kabru, a height of nearly 24,000 ft. without suffering. Sir W. M. Conway,

however, doubts the accuracy of this measurement. Herr Willy Rickmers describes an ascent of Ararat on September 4, 1894, with the Cossack Posharski, who had made the ascent alone a few days before. There are two articles on glaciers, one by Drs. Ad. Blümcke and H. Hess on the Hochjoch Ferner in 1893, and one by Dr. H. Hess on a survey of the changes in the Alpeiner Ferner (Stubai) between 1886 and 1892. Each article is accompanied by a map. Herr Albrecht Penck describes the river Adige, with special reference to the recurrence of its floods. Herr Carl Pfund describes the attempts at mining in the Isar basin and the Werdenfels district in the fifteenth century. There is an amusing article by Herr Carl Wolf on the Volksschauspiel at Meran, and the efforts which he made to induce the peasants to take part in it. Herr J. C. Platter gives an interesting description (with plates) of the chief castles in Tyrol. The volume is adorned with thirteen full-page illustrations and more than forty lesser ones. Attached to it, beside the maps above mentioned, are a panorama from the Ahornspitze (Zillertal), by J. R. Sigl (Innsbruck), and the first sheet of the special map of the Oetzthal and Stubai (1 = 50,000), by S. Simon (Interlaken). J. S.

Report of the Department of Lands and Survey, New Zealand, for the Year 1894-95. By Stephenson Percy Smith, Esq., F.R.G.S., Surveyor-General.

Some sections of this report will prove of special interest to many of our members. Of these sections that by Mr. A. P. Harper, A.C., on 'The Karangaroa River and Passes to Canterbury' deserves first attention.

In it Mr. Harper describes the explorations which he carried out in company with Mr. C. Douglas in that network of valleys to the south-westward of Mount Cook. These deep valleys, with their steep sides clad in luxuriant vegetation, present great difficulties to the explorer. For some distance he may have made his way with comparative ease over flats where wandering glacier streams form a network of channels, and then suddenly be brought to a stand by a precipitous gorge through which the concentrated strength of the torrent rushes with fury, and to force a passage he is compelled to ascend the mountain-sides, where difficult crags with treacherous crevices are marked by dense vegetation. All the rivers in these gorges have sources in the glaciers which form a background of snowy splendour to every scene.

Mr. Harper, being possessed of a keen appreciation of the beautiful in nature, is admirably fitted for that particular work of the survey which aims at opening up the wealth of beauty to the general public. One of the tributary valleys—that of the Copeland—included in the excellent map accompanying Mr. Harper's report is of special interest at present, owing to its leading to the pass recently crossed for the first time by Mr. Fitz Gerald, and connecting by what in the future may be an easy horse-track that portion of the west coast with the Tasman valley and civilisation.

The paper by Mr. W. H. Dunnage on 'An Ascent of Mount

Ruapehu' and a first descent over snow and ice to its crateral lake, is also of much interest, and, like Mr. Harper's paper, is illustrated by reproductions of photographs.

W. S. GREEN.

Un Angolo Dimenticato delle Pennine : la Valle di St. Barthélemy.
(Turin : 1895.)

An interesting and valuable monograph on the mountains round this valley, lying between the Valpelline and the Valtournanche, has been issued by SS. Canzio and Mondini. It is reprinted from the pages of the 'Bollettino' for 1894, and will be invaluable to travellers who may have the good fortune to visit that beautiful district. We understand that the curé of the valley intends to make an arrangement whereby, on payment of a small fee, climbers will be enabled to occupy rooms at the sanctuary of Cunei. At St. Barthélemy itself the inn is being greatly improved, and next summer it will probably afford comfortable quarters, so that climbers who are making their plans for 1896 will do well to consider the claims of this little-visited but easily accessible corner of the mountains.

CORRESPONDENCE.

NANGA PARBAT.

To the Editor of the ALPINE JOURNAL.

SIR,—Referring to the subject of mountain sickness, which was mentioned in Dr. Collie's very interesting paper on Nanga Parbat, I may mention that I have climbed mountains in Europe, Asia, Africa, and America, and have always found that I suffered from it at great heights, especially when a little out of health or condition; also that the symptoms disappeared altogether when at rest or descending, and were worse in a dry than in a moist climate. I never felt them so much as I once did in the Rockies, at a height of only 14,000 ft.

I may add that the name 'Nanga Parbat' is derived from the Sanscrit, and means 'Naked Mountain.' The natives pronounce it 'Nunga Purbut,' the *u* being sounded as in 'sun' and the *r* rolled. The sound of *a* in 'bat' is, as far as I am aware, unknown in Indian languages.

Your obedient servant,

J. R. OLIVER, Maj.-General.

Army and Navy Club : February 19, 1896.

S. A. C. HUTS.

To the Editor of the ALPINE JOURNAL.

DEAR SIR,—As no one else appears as yet to have sounded the alarm, I venture to ask whether you think that through the columns

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of the 'Alpine Journal' the attention of the authorities of the S. A. C. might be drawn to the danger that seems to be threatening the huts they have so nobly provided for the comfort of climbers.

Many of these huts are quite new, and almost every year sees fresh additions with improvements. But each year is also adding to the heaps of *débris* which are growing in front of the doors, heaps which must in time assume alarming proportions, unless some fresh regulation be added to the existing ones for the preservation of cleanliness.

Last year I had the privilege of making use of several of these huts, both in the Oberland and in the Valais. For these comforts I am very grateful to the S. A. C., and my indebtedness to them is in no way diminished by the circumstances I am about to allude to, which are due entirely to the thoughtlessness of climbers and their guides.

In the case of all these huts the heaps of empty tins, egg-shells, tea-leaves, coffee-grounds, &c. &c.—not to mention anything more objectionable—formed, to say the least, an eye-sore. And the state of one was indescribably foul externally.

Would it not be possible for the S. A. C. to direct that no rubbish be left within a certain distance of the hut, or in some cases, perhaps, to mark out a spot for the purpose? The suggestion may seem 'faddy' to some; but, if the future of the huts is fairly considered, I think most will agree that it is time something were done.

Yours obediently,

W. C. COMPTON.

April 8, 1896.

SÜDLENZ-SPITZE, NADELHORN, AND ULRICHSHORN IN ONE DAY.

To the Editor of the ALPINE JOURNAL.

101 Mount Street, W.: April 4, 1896.

DEAR SIR,—In the February number of the 'Alpine Journal,' p. 56, it is stated that these three peaks were crossed in one day 'for the first time' last year. This is incorrect. All three peaks were ascended in one day (whether for the first time or not we cannot say) in 1889 by Mr. Walter Cosser and his guides, who started from a bivouac on rocks above Saas-Fee and followed the route described in the 'Journal.'

Yours truly,

J. A. LUTTMAN-JOHNSON.

THE ICE AXE IN SCOTLAND.

To the Editor of the ALPINE JOURNAL.

DEAR SIR,—In these days of happily well-pronounced patriotism and general inclination to encourage British industries and British

sports, it is, perhaps, not amiss to draw attention to the spring snow-climbing in Scotland. This sport is now thoroughly well established, and is followed principally by members of 'the Scottish Mountaineering Club,' who are most enthusiastic and able mountaineers. During this last Eastertide over thirty members of the S.M.C., as well as twelve members of the Alpine Club, some of whom are also members of the former, met at Fort William, each armed with an ice axe. At one time or other all were engaged in climbing the icy buttresses or narrow rock ridges, or in forcing their way up the steep gullies on the north face of Ben Nevis, and, though the weather was damp, foggy, and more or less rainy, each one considered that he had enjoyed a rare good time, and those who knew the Alps readily acknowledged that the climbing they had met with on the big Ben and neighbouring mountains was first-rate, from a Swiss, as well as from a Scotch point of view.

This is the golden age for climbing on the mainland in Scotland. It is the equivalent of what was the case a dozen years ago in Skye, Cumberland, and Wales. Victory awaits the bold mountaineer in scores of gruesome gullies headed by huge, uncanny cornices, on hundreds of rugged, frost-rent ridges and faces, and, on dozens of weird pinnacles. I myself saw on one day three good new expeditions being made at once, and had the good fortune to take part in one of them. The character of the climbing is so good that on one ice-clad ridge of 1,500 ft. a party were hard at work for nine hours consecutively.

Rock-climbs of 1,500 to 2,000 ft. abound in Scotland, also snow gullies of a similar height, and glissades were made last year on Ben Nevis of fully 2,000 ft., and this year of over 1,500 ft. The show of ice axes in the umbrella stands in the two principal hotels at Fort William during Eastertide will not soon be forgotten by those who saw them.

I am, Sir, very faithfully yours,

WM. CECIL SLINGSBY.

April 21, 1896.

THE GERMAN-AUSTRIAN ALPINE CLUB AND THE USE OF THE ROPE.

To the Editor of the ALPINE JOURNAL.

SIR,—When travelling in Tyrol last summer we were much surprised by the custom which prevails in the Ortler district of roping travellers and guides together two and two. My husband and I started to climb the Königspitze; at the foot of the steep slope leading to the 'joch' the guides halted to put on the rope. Instead of one rope, however, two were produced, and we were each roped separately to a guide, the men declaring that, as this was the rule of the German-Austrian Alpine Club for that district, they were bound to obey it. This arrangement was persisted in on the descent over the Cedeu Glacier, where a quantity of new snow obscured the numerous crevasses.

The two guides usually walked quite apart, each with his tourist attached, except that occasionally, when guide No. 1 was doubtful whether he was on the brink of a crevasse, guide No. 2 would come up to the same spot to aid in the investigation. The danger of this was so obvious that we refused to continue it.

Shortly afterwards we met two German climbers, who told us the guides' statement was quite correct; the rule had been made by the D.Oe.A.V., in consequence of a fatal accident on the Königspitze, in which the slip of one member of a party of four had dragged down all the others.

Surely this is abandoning a safer method for one which is more dangerous, simply because the safer fails occasionally, and therefore cannot be good mountaineering. In the Badminton volume on 'Mountaineering' Mr. C. T. Dent speaks strongly of the small amount of security afforded by the rope to a party of two, stating that 'it would require superhuman strength for one man to pull another out of a névé crevasse of any depth;' and Sir Frederick Pollock, alluding to the practice of roping a party two and two, says 'the Alpine rule of three should be as inexorable as the rules of arithmetic when the way lies over crevassed snow fields.' In the Ortler Alps, where the majority of the expeditions are over snow, the arguments that might be used in favour of roping two and two in such districts as the Dolomites are clearly inapplicable. It is said that more serious accidents occur on the mountains under the jurisdiction of the D.Oe.A.V. than in any other Alpine region. Is it not possible that the practice of climbing two on a rope may have something to do with this undesirable pre-eminence?

I am, &c.,

F. MAY DICKINSON BERRY.

Our correspondent does good service by calling attention to a practice the existence of which is probably not generally known to English mountaineers. It is difficult to believe that so influential a body as the D. und Oe.A.V. could have made the mistake of founding on a particular instance a general regulation with regard to the use of the rope, binding on all guides within their jurisdiction. Whatever may be the reason for the ordinance, and whatever its wording, there seems to be no doubt that it is liable to be interpreted by the guides in a manner prejudicial to the interests and the safety of mountaineering. We have not the regulation before us, and there may be very possibly some restrictions with regard to its application. Some mountaineers, we are aware, advocate that on rocks, under certain conditions, the system of roping in pairs is preferable. Even with these limitations the view is not one that we can endorse. Such conditions must be of very rare occurrence, and the practice, if permissible at all, should be followed as an exception, not as a rule, and then only on rocks. It appears incredible that a leading Alpine Club should not only sanction, but actually lay down as a rule, that a party crossing crevassed snow fields (and all névé is presumably crevassed) should be roped two and two. Possibly time and trouble may be

saved, but these are matters supremely unimportant as compared with the safety of a party, and in our opinion, in which we shall probably be backed by the great bulk of mountaineers who can speak from authority, the method of roping in pairs is improper, simply because it is dangerous. The safety of a party might be best ensured, if there were one weak member, by detaching him altogether and letting him shift for himself; but such an action would universally be considered so monstrous that there is no need for us to condemn it. Yet to rope the weak man to one other, however skilful, merely doubles the extent of the disaster that would be likely to happen. Places there are, no doubt, in the Alps where the slip of one may possibly lead to the fall of the whole party; but this depends very greatly indeed on the composition of the party, on its arrangement, and on the individual proficiency and steadiness of the members. If there are places where no amount of skill could save a whole party from being dragged down if one were to slip, such places ought not to be climbed at all. In the case of rock mountains, not omitting the Dolomites, we are convinced that the majority would endorse the views we have expressed. There may be, as we have said, some few who will dissent. But in the case of névé and snow mountains there should be no difference of opinion, and the rule is absolute that the party should consist of not less than three, all to be on the same rope. And here it will not be out of place to point out that if a party consists of five all should be on one rope. A traveller and guide roped together alone are running just as much risk when a party of the proper number is near them as when they are alone. If the party consists of six it is often more convenient to use two ropes, three on each, and this method is safe. In the long chapter of Alpine accidents very few instances can be cited of loss of life from the dragging down of a whole party by the slip of one. We do not forget the accidents on the Matterhorn in 1865, that on the Jungfrau in 1887, or the most recent one on the Rothhorn during the last season. In all probability, if the party had on the two first-named occasions been roped two and two lives would have been saved, and possibly in the last-named instance Biner's life might have been spared. On the other hand, instances innumerable might be cited where, on rock and on snow alike, a slip or fall has been checked, and no misfortune whatever has occurred, because there were more than two on the rope. It is to be hoped that the D. und Oe.A.V. will reconsider the matter, and bring their instructions to guides more into harmony with the general opinion on the subject. If the regulation to which our correspondent calls attention is persisted in, English mountaineers will do well either to avoid Tyrol as a field for mountaineering or to take their own guides with them.—[ED.]

THE FACSIMILE OF CHRISTIAN ALMER'S
'FÜHRERBUCH.'

To the Editor of the ALPINE JOURNAL.

Grindelwald :

April 15, 1896.

GEEHRTER HERR REDAKTEUR,—Ich habe dem Herrn Sekretär des 'Alpine Club' einen vollen Bericht der Verhandlungen zwischen meinem Advokaten in London und jenen des Herrn Cunningham der Reproduction meines Führerbuches wegen geschickt. Es hat mir sehr leid gethan, dass die Zeugnisse, welche mir von meinen Freunden in meinem Buche eingeschrieben worden sind, auf solche Art und Weise benutzt worden sind, da weder meine noch meiner Freunden Erlaubniss gegeben worden ist, und weil auch in der Einleitung mein Leben als Führer ganz unrichtig dargestellt ist.

So habe ich mein möglichstes gethan, um dieses in Zukunft zu verhindern. Wie Sie aus dem Bericht sehen werden, ist es mir gelungen ein Versprechen zu erlangen, dass keine Exemplare mehr dieser Reproduction sollen verkauft oder sonst vertheilt werden. Ich habe gar kein Geld erhalten wegen der Exemplaren der Reproduction, welche verkauft worden sind.

Ich hoffe nur, dass meine Englische Freunde verstehen werden, dass ich niemals die Idee gehabt habe, eine solche Benützung von meinem Buche zu machen, oder dasselbe zu verkaufen, und wenn Herr Cunningham sich einbildete, dass ich ihm meine Einwilligung gegeben hatte, so war er gänzlich im Irrthum.

Auf der Bitte des Herrn Capitän Abney wünsche ich beizufügen, dass er meinem Advokaten in London gesagt hat, dass die Reproduction, ob mit seinem Namen veröffentlicht, nicht seine Spekulation war: er hat nur die photographische Arbeit überwacht und seine Auslagen wurden ihm von Herr Cunningham wieder gegeben. Es freut mich desswegen sagen zu können, wie er mich bittet, dass der Herr Capitän hat es mir jetzt ganz klar gemacht, dass er durchaus geglaubt hat, wahrlich und ehrlich, dass ich meine Einwilligung gegeben habe. Desswegen beeile ich mich alles widersprechendes zurückzuziehen, dass ich gegen den Herrn Capitän gesagt oder zu verstehen gegeben habe, in den Briefen und der Erklärung das ich dem Herrn Coolidge geschickt habe um im 'Alpine Journal' benutzt zu sein.

Mit aller Hochachtung und Gruss,

CHRISTIAN ALMER.

(Translation.)

Grindelwald :

April 15, 1896.

HONOURED MR. EDITOR,—I have sent to the Secretary of the Alpine Club a full account of the negotiations between my lawyer in London and those of Mr. Cunningham relating to the reproduction of my 'Führerbuch.' It has caused me much distress that the entries which have been made by my friends in my book should have been made use of in such a manner and fashion, since neither

my permission nor that of my friends was given, and also because in the Introduction my life as a guide has been quite inaccurately described.

So I have done my utmost to prevent this for the future. As you will see from the account sent to the Secretary, I have succeeded in obtaining a promise that no more copies of this reproduction shall be either sold or otherwise put into circulation. I have received no money whatsoever for the copies of the reproduction that have been sold.

I only hope that my English friends will understand that I never have had the idea of making such a use of my book, or of selling the same, and that if Mr. Cunningham thought I gave him my consent he was entirely mistaken.

At Captain Abney's request I wish to add that he has told my lawyer in London that the 'Facsimile,' though published with his name, was not his speculation: he only superintended the photographic part, and was repaid by Mr. Cunningham the [actual out of pocket] expenses incurred. I am pleased, therefore, to be able to say, as he asks me to do, that the Captain has now made it perfectly clear to me that he throughout believed genuinely and honestly that I had given my consent. Hence I hasten to withdraw anything to the contrary that I may have said or implied against the Captain in the letters and declaration that I sent to Mr. Coolidge for use in the 'Alpine Journal.'

With respectful greetings,
CHRISTIAN ALMER.

[The explanatory words in brackets are added at Captain Abney's suggestion and on our own responsibility.—EDITOR 'A. J.']

To the Editor of the ALPINE JOURNAL.

Grindelwald:
April 20, 1896.

SIR,—As I was the means of first communicating Christian Almer's complaint to your readers, I think it right and proper to add here that he has shown me his letter of April 15, and that I concur in all he has said in it.

I am, yours faithfully,
W. A. B. COOLIDGE.

We have received the following letter through Messrs. Paines & Co., Mr. C. D. Cunningham's solicitors:—

To the Editor of the ALPINE JOURNAL.

The Oriental Club, Hanover Square, W.:
April 10, 1896.

SIR,—I was greatly surprised to find that you had, without any previous notice to either Captain Abney or myself, published a letter in the February number of the 'Alpine Journal' from the Rev. W. A. B. Coolidge, as well as an editorial note which was calculated to lead to a misconception as to our attitude.

I received from you on Wednesday, February 12, a letter enclosing a copy of a declaration made by Almer in the German language, with an intimation that you had received it from him for publication, and that any reply I wished to make must be in your hands by the following Saturday (February 15), when the 'Alpine Journal' went to press. At the same time you wrote to Captain Abney informing him of the purport of your letter to me.

I replied on February 12 that if and when Almer made any complaint to either Captain Abney or myself directly we should be prepared to deal with it, and that anything you might, in the exercise of your editorial discretion, think fit to insert in the 'Alpine Journal' would be entirely on your own responsibility. Notwithstanding this, you published in the 'Journal' not Almer's declaration, but a letter from Mr. Coolidge which had not been communicated to us, and of which we had never previously heard, as well as an editorial note which, to say the least of it, is not quite consistent with the facts.

No reply dealing with the merits of the case was sent to your letters in the first place, because the time you gave for the purpose was insufficient, but more especially because I do not think the 'Alpine Journal' a suitable or proper medium for the discussion of the personal and private affairs either of guides or of members of the Alpine Club, and I am confident that the majority of my fellow-members will share my regret that you should, from whatever reason, have been induced to allow the pages of the 'Journal' to be made use of for such a purpose.

I am, Sir, your obedient servant,
C. D. CUNNINGHAM.

We have further received the following letter from Messrs. Paines & Co. :—

To the Editor of the ALPINE JOURNAL.

April 27, 1896.

SIR,—We have heard indirectly, but have no reason to doubt the accuracy of our information, that both the Rev. W. A. B. Coolidge and Herr Christian Almer intend sending to you for publication in the forthcoming number of the 'Alpine Journal' further communications dealing with the merits of the recent dispute between them and Captain Abney and Mr. Cunningham. We scarcely think that, in view of the letter from Mr. Cunningham we sent to you on the 10th inst., you will continue to open the columns of the 'Journal' to matter of so contentious and inappropriate a nature; but we deem it advisable to remind you that anything affecting our client you may in your discretion insert in the 'Alpine Journal,' at the instance of those gentlemen or otherwise, will be published entirely on your own responsibility and at your own risk.

We are, Sir, your obedient servants,
PAINES & Co.

[In the exercise of our editorial discretion we printed in our last number Mr. Coolidge's summary in place of Christian Almer's

affidavit and covering letter. We did so because the former is more concise, and on the whole less forcible in expression. The statements made on Almer's behalf in Mr. Coolidge's letter are substantially identical with those in the affidavit which Mr. Cunningham saw. No inaccuracy whatever has been pointed out in our editorial note.

With regard to the limits between public and private matters, we altogether differ from Mr. Cunningham. We consider the literary ownership in writings such as the entries in guides' 'Führerbücher,' given for use in a particular place and for a special purpose only, to be a matter of interest to all mountaineers; and we hold that Almer had a perfect right to ask a place in our pages for his disclaimer of having given authority for, or approved, the use made of his book and his friends' entries as a literary speculation, and to assert the unquestioned fact that he has received no payment or compensation whatever in respect of that use.

If Mr. Cunningham is of opinion that the members of the Alpine Club are likely to think differently, his obvious course is to lay the whole matter before the Committee. To avoid any possible complaint we have printed here all the letters sent to us on the subject since our last issue, and the correspondence must now, as far as these pages are concerned, cease. The subjoined notes refer to another point arising on our review.—EDITOR *A. J.*]

To the Editor of the ALPINE JOURNAL.

SIR,—My attention has been called to a communication, signed 'D. W. F.,' in the February number of the 'Alpine Journal,' in which (at p. 69) the following passage occurs: 'Few even of the most pedantic critics will think the worse of Mr. W. E. Davidson for putting his name under Jungfrau without a G, or of Mr. Coolidge and two other climbers for leaving out the first C in Schreckhorn.'

Whether critics, pedantic or otherwise, will think the worse of the Rev. Mr. Coolidge (or of the other climbers whose names, while publishing to the Alpine world that of their colleague in cacography, 'D. W. F.' more mercifully withholds) for his inaccurate spelling of the word 'Schreckhorn' is a matter to me personally of indifference.

As, however, the earlier portion of the paragraph above quoted is clearly calculated, and presumably designed, to induce those of your readers who have not seen Christian Almer's 'Führerbuch' to believe that I have somewhere therein written Jungfrau without a G, I shall be obliged if you will allow me, on my own behalf, to state that this is not the case. I have not written the word in question either with a G, without a G, or in any other way, from one end of the 'Führerbuch' to the other.

I am, Sir, your obedient servant,
W. E. DAVIDSON.

[Our reviewer's language was, as Mr. Davidson's quotation shows, in exact accordance with the facts. The slip of the pen referred to occurs in an entry in Almer's 'Führerbuch' describing the joint climbs of Mr. Davidson and a friend, and the first signature under it is 'W. E. Davidson.' Mr. Davidson can hardly need to be reminded that both in law and literature we are all responsible for what we sign. The reviewer made no researches into handwritings in this or in any other instance; nor would they have been material to his object, which Mr. Davidson has probably misunderstood. It never entered into his mind to set up an order of 'colleagues in cacography,' in which it appears from the autograph at the beginning of the volume all who spell Allmer with one *l* would have to be included! To attach the slightest importance to slips of the pen in documents not meant for reproduction or publication would seem to the reviewer foolish, if not worse. His intention was to emphasise the absurdity of this kind of criticism by pointing out an instance in which such a slip had escaped even the microscopic eye of an accomplished ex-secretary of the Alpine Club.—EDITOR *A. J.*]

PROCEEDINGS OF THE ALPINE CLUB.

A GENERAL MEETING was held in the Hall of the Club on Tuesday, February 4, at 8.30 P.M., Mr. Charles Pilkington, *President*, in the chair.

The following candidates were balloted for and elected members of the Club: Messrs. G. A. Arbuthnot, A. M. Bartleet, Capt. L. S. Blackden, R. L. Bowles, E. R. Clarke, C. S. King, Rev. H. Martin, E. H. Spender, Rev. P. S. Whelan.

The HONORARY SECRETARY AND TREASURER presented the accounts for 1895; he explained that he had divided the expenditure into two headings, viz. ordinary and extraordinary. Notwithstanding the fact that the former included 8 months' rent for the old rooms in St. Martin's Place and 6 months' rent for the new premises, or an increase of 128*l.* 11*s.* 4*d.* over the previous annual charge for rent, and that wages, light, and firing (costing 27*l.* more than in 1894) were all considered as ordinary expenditure, there was a small excess of 8*l.* 10*s.* 7*d.* in the income over the ordinary expenditure. The only other item under the latter heading which called for any remark was the cost of the 'Alpine Journal,' viz. 112*l.* 6*s.* 6*d.*, against 62*l.* 12*s.* 11*d.* in 1894. In case members should go a little further back and compare the cost of Vol. XVII., 174*l.*, with the previous vol., XVI., which was but 57*l.*, he pointed out that the former was larger, *i.e.* it contained more pages. The illustrations had been more numerous, but left much to be desired, and he trusted that in future they would be fewer in number and better in quality. The number of copies printed had been increased, and the sale of back numbers had diminished, owing to so many being out of print. Nos. 107 and 116 were no longer to be obtained from the publishers, but the Assistant Secretary had two or three bound copies of Vols. XV. and XVI., which members could obtain from him. Turning to the

extraordinary expenditure, he thought it was hardly necessary to refer to any particular item ; the total amount was large, but every member who had seen the new premises seemed pleased with them, and he was sure the money had been well spent. The Treasurer's cash account showed that it had been necessary to sell out the investment in Consols, and that the total deficiency was 558*l.* 2*s.* 10*d.*, of which 350*l.* had been borrowed at Consols rate of interest and the remainder had been paid out of 1896 income. With the increased subscriptions which had been promised he thought that the total deficiency might be paid off in three years, provided that the Club was strictly economical.

Mr. HORACE WALKER hoped that something would be done to improve the illustrations in the 'Journal.'

Sir W. M. CONWAY explained that the illustrations were good in themselves, but the paper used was unsuitable for their reproduction. Illustrations were specially important in an 'Alpine Journal,' and he hoped that with the new paper which had been chosen a great improvement would be obtained.

Mr. F. O. SCHUSTER said he would like to have a budget for the coming year, and to know how many members had increased their subscriptions. Many had come forward when the circular was first issued and had agreed to pay two guineas in future, but many had held back. There were a few who offered to pay at the increased rate for a fixed number of years, but the Committee did not see their way to accept such individual offers. It would be advisable, in his opinion, to clear off the debt by an increase of ordinary income, *i.e.* by an increase in the number of members paying two guineas.

The HONORARY SECRETARY said it was difficult to form a correct estimate of future expenditure yet. He considered that he was near the mark in saying, as he had, that the deficiency might be wiped out in three years. Excluding the members elected since April last, when the alteration to Rule XV. was carried, the number of members was 552, of whom 21 were honorary members or paid no subscription under Rule XVII., so that there were 531 who were invited to pay the increased subscription. Of these, 288 had formally promised ; 11 had paid the two guineas without promising, which meant that they would have to continue to do so ; 93 had definitely refused, thus leaving 139 who had not in any way intimated their intention. Some of these, he hoped, were only waiting to see whether, in their opinion, the new premises justified the increased subscription, and would send their assent as soon as they had satisfied themselves as to this. At present he calculated that the increase in income of this year would be 340*l.*, and the increase in ordinary expenditure over 1895 he put down as 160*l.*, but much depended on the actual cost of the 'Alpine Journal' and of exhibitions, &c.

The PRESIDENT thought that as much as was possible had been done in regard to asking members to increase their subscriptions, but that no doubt there were still a certain number out of those who had not replied who would consent to do so.

On the motion of the Honorary Secretary, seconded by Mr. HORACE WALKER, the accounts were unanimously passed.

Dr. J. NORMAN COLLIE read a paper entitled 'Climbing on the Nanga Parbat Range,' which was illustrated by lantern slides. A short discussion ensued, in which Mr. Horace Walker, Mr. D. W. Freshfield, and Sir W. M. Conway took part. The PRESIDENT again expressed the sorrow all the members of the Club felt at the fatal accident to Mr. Mummery, who had found his grave amidst the finest mountains in the world. The proceedings terminated with a vote of thanks to Dr. Collie for his extremely interesting paper.

A GENERAL MEETING of the Club was held in the Hall on Tuesday, March 3, at 8.30 P.M.; Mr. Charles Pilkington, *President*, in the chair.

The following candidates were balloted for and elected members of the Club: Messrs. H. W. C. Bowdoin, P. G. W. Eckford, E. S. Grogan, G. Macartney, W. D. Monro, C. E. Shea, Rev. C. H. Thompson.

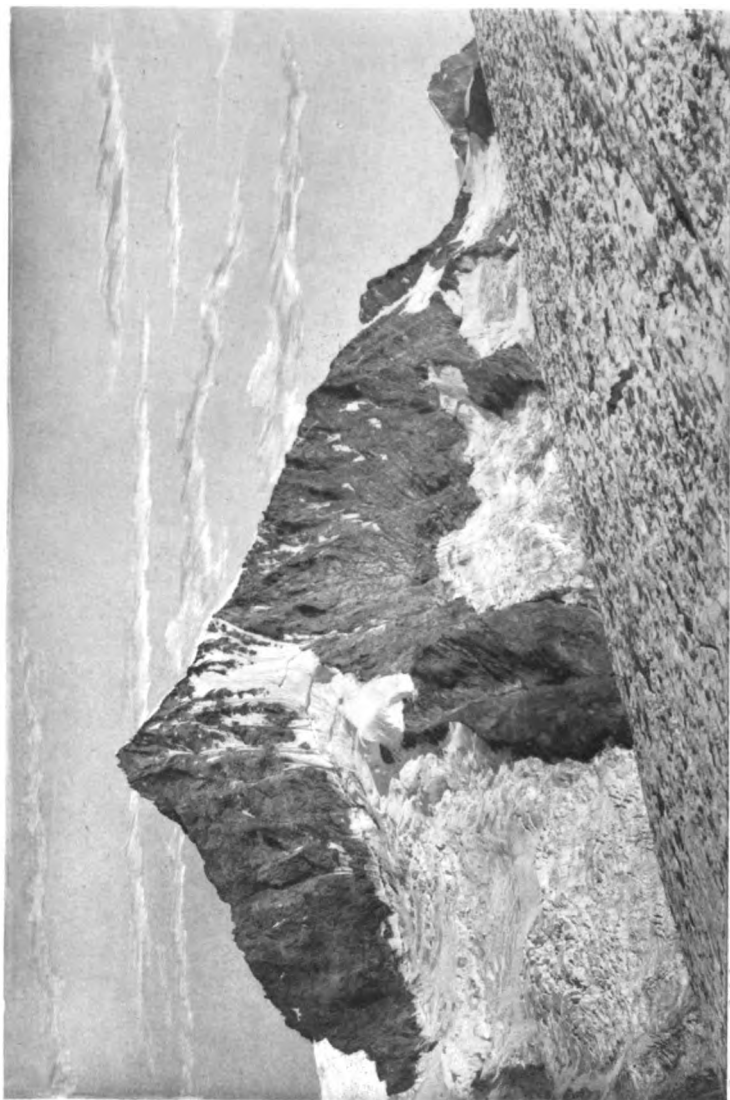
Mr. E. A. FITZGERALD read a paper entitled 'First Ascents of Mounts Sefton, Tasman, and Haidinger,' which was illustrated by lantern slides and by an exhibition of enlarged photographs and sketches of the New Zealand Alps, which remained on view in the Hall for a fortnight. In the discussion which ensued Messrs. Stogdon, Grove, and Barrow took part. Mr. FitzGerald in reply said that he had found crampons to be very useful, and, although when in New Zealand he climbed a good deal with Zurbriggen alone, he was sure it was a bad plan to have two men only on a rope, and that it should be avoided in all cases where it was possible to do so. The President congratulated Mr. FitzGerald on the difficult and dangerous ascents which he had successfully made. He also congratulated the members of the New Zealand Alpine Club upon the climbs and the explorations they had effected in their formidable range of mountains without professional teaching or assistance, and in spite of the absence of trained porters for establishing efficient bases from which to work. He proposed a hearty vote of thanks to Mr. FitzGerald for his paper and for the very interesting collection of photographs which he had brought together. This was unanimously carried, and the proceedings terminated.

A GENERAL MEETING was held in the Hall of the Club on Tuesday, April 14, at 8.30 P.M.; Dr. Savage, *Vice-President*, in the chair.

Mr. F. W. OLIVER read a paper entitled 'Mont Herbetet and its Southern Ridge,' which was illustrated by lantern slides. A short discussion ensued, in which Messrs. Yeld, Carr, Solly, Wilson, and Sir W. M. Conway took part. Mr. Oliver in replying stated that a large number of the views which he had shown were lent by Signor Vittorio Sella, who wished it to be known that he would be glad at all times to lend members any of his photographs or lantern slides for the purpose of illustrating any paper which was read to the Club.

The proceedings terminated with a vote of thanks to Mr. Oliver for his interesting paper, and to Signor Sella for his kind offer.

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Mount Washington from Mt. Mitten, N.H.

THE
ALPINE JOURNAL.

AUGUST 1896.

(No. 133.)

THE WEISSHORN FROM THE SCHALLJOCH.

By EDWARD A. BROOME.

(Read before the Alpine Club, May 5, 1896.)

MANY of our craft, including such high authorities as Tyndall and Whymper, have considered the Weisshorn to be the noblest peak in the Alps, and it is a mountain that has always had a peculiar fascination for me. Its very shape is most impressive and almost faultless: the massive base rising from the great glaciers, gradually narrowing away into the three-sided pyramid (of all mountain forms surely the most perfect), with the three sharp arêtes dividing the huge faces, and tapering off into the spire-like pinnacle of snow, all form a grand, harmonious picture; though it is a picture on such a large scale that it is only at a considerable distance it can be seen to the fullest advantage.

I am proud to have been the first to ascend the peak by one of these three great arêtes, viz., the south-western, and consider it to be one of the best rock-climbs I have done. 'Pride goeth before destruction' however, and my happiness, perchance, would have not been quite so complete had I foreseen this paper to-night. As I climb solely for the love of the thing, being neither an observant nor scientific mountaineer, and (low be it spoken here) even neglect the first duty of taking anything beyond the barest 'shirt-cuff' notes, I have found it somewhat difficult to put this paper together. Still, I'm too old a soldier not to know the value of discipline in a regiment like ours, and the regimental orders of my very good friend our adjutant (and secretary) had to be obeyed, and here it is; so I trust you will excuse its shortcomings. The paper shall at any rate have one merit, that of brevity.

As we all know, the Weisshorn was first ascended by the late Professor Tyndall in 1861 up the great east snow-arête. His description in the 'Hours of Exercise' and Leslie Stephen's beautiful paper in the first volume of the Journal fully describe this route and are most fascinating reading. This ascent has been the one usually followed, and as probably most of our members have made it, I need not at present further enlarge thereon. Other notable ascents were Mr. Kitson's in 1871 by the north arête, which I should imagine from his paper and my own observations to have been a long, tedious affair, mostly snow and ice, and with an immense deal of step-cutting; and three different routes up the western face, taken respectively by Mr. Passingham in 1879, Mr. Percy Farrar in 1883, and Mr. Cornish in 1889. All these are undoubtedly very long, extremely difficult, and very dangerous from falling stones. I was much impressed with these points in Mr. Cornish's paper, when I heard it in 1890, and believe no further ascents from that side have since been made. One other route remains to be noticed, and this was the one taken from the Schalliberg Glacier and up the south-eastern face by Messrs. Davidson, Hoare, and Hartley in 1877, and graphically described in the latter gentleman's paper read here (or rather in St. Martin's Place) in 1878. To this I propose, with your permission, to recur later on.

I myself had a very difficult climb up Tyndall's arête on a most unpleasant day in 1889, and came to the conclusion that this ascent, like most others, was easy or difficult, short or long, enjoyable or unpleasant, according to the state of the weather and the mountain. I believe mine was the first ascent of that season; the snow slopes were in bad order, the rocks below the ridge glazed, and those on it were all covered with fresh snow. There was also a bitterly cold, strong north wind, which from a distance made the snow blowing off the summit look quite like a volcano in full blast, and this rendered progress difficult, besides making my two guides and myself resemble exaggerated editions of Father Christmas. I remember also that it was impossible, when at length we had surmounted the difficulties, to remain more than a few seconds on the top. I recollect too, that my 'form' was severely criticised by friends at the Riffelalp telescope, through which I was being watched all day; but as a set-off against this, I gladly recall that my kind backers, who had accepted longish odds against my ultimate success, had the best of it! But the whole thing had left an undeservedly unpleasing impression of my favourite mountain on my mind,

and I felt that when next I went up I must have a better time, make more satisfactory arrangements with the weather office, and *cross* the peak, if possible by a new route. To my mind a mountaineering walk is in this respect much like a good English country scramble; and though both are delightful, there is not quite the same fun in going and returning from either the same way!

The problem therefore that had to be solved was how to cross the Weisshorn, making a new ascent if possible; and the only new ascent that remained was by the south-eastern arête from the Schallijoch. True, on looking the matter up, I discovered that such authorities as Tyndall, Leslie Stephen, Hartley, and Kitson, twenty years ago, and in later days Cornish and others, who had carefully prospected the peak all round, had condemned this ridge (I quote Mr. Hartley) as 'absolutely impossible, or at all events would have taken the best part of a week to circumvent'; but I reflected that 'Fools rush in where angels fear to tread,' and sometimes not altogether without success!

I had been having a week or two's good climbing from Saas-Fee, which, by the way, deserves to be much better patronised by our 'centrists' than it is; and wishing to cross the Dom, as well as try the Weisshorn, came round to Zermatt to find another first-rate guide to accompany my old friend Josef Marie Biner. Ambrose Imboden, of St. Nicholas, was at liberty, and I cannot speak too highly of the enterprise and companionable qualities of both men.

The ascent of the Dom by the eastern face is not however to be recommended; always considered dangerous, it proved far more so even than I had anticipated. Some of the couloirs which seam the face must be crossed, and they all appeared to be raked without cessation by stones of all sizes, both by day and night. During the whole climb our eyes and ears were always on the alert and aloft, our feet had to take care of themselves, and our rapidity in ticklish places was great; still with all precautions we had some near shaves, and once my new rope was cut in two by a sharp stone! I will only add that I should feel really unhappy if I knew that any friend of mine thought of undertaking this Balaclava affair—unless indeed I happened to be quite sure that the said friend had previously executed his will in my favour!

The Weisshorn expedition is quite another matter, and one that can be strongly recommended to lovers of a maximum of hard work combined with a minimum of danger. From the Dom summit we thought we were able to trace our route

pretty clearly, and the rock-arête looked blacker and freer from snow and ice than I had ever before seen it. To mountaineers 'old friends with new faces' are always welcome, but mountains, like ladies, are doubly welcome, and indeed ever so much nicer, when the objectionable powder and paint on their 'faces' and 'cols' have disappeared!

We started from the Randa Inn at 10 o'clock on Sunday morning, September 1st; personally I would have preferred 8 o'clock, but religious considerations had very properly to be taken into account. Mounting the slopes of the Schalliberg was about the hottest business the oldest inhabitant could remember. I pitied the two poor porters who were toiling under the burden of our couvertures, casseroles, canteen, and comestibles; and was glad to rest, and of course admire the view, whenever—which was not often—a little shade, such as a bank or stumpy fir-tree, could be found. We kept much to the left of the usual route to the old Weisshorn Club-hutte, and above the left bank of first the Schallibach stream, and later the Hohlicht Glacier, and took the opportunity afforded by the shadow of the last sign of civilisation, in the shape of a low wall, to stop for an hour between one and two o'clock.

Hence we struck up the moraine on the eastern bank of the Schalliberg Glacier, intending to cross the ice and find a gite somewhere under the Schallihorn rocks. Unfortunately however this was not found feasible; the ice was too steeply inclined, and to get on it would have involved much cutting, added to which the stones were rolling off too freely to be quite pleasant. We therefore thought it might be quicker, and certainly would be wiser, to descend again down the moraine for perhaps 800 to 1,000 feet, traverse under the various snouts of the Schalliberg Glacier, and then work our way up its right, or west, bank. (Future parties should avoid this mistake and consequent loss of time, estimated at a couple of hours, and go direct from the Hohlicht chalet to the foot of the glacier.) From this point we toiled up the moraine again for a few hundred feet, and crossed to that rock-rib descending from the Schallihorn which divides the two glaciers.

By this time one's thoughts turned longingly to a nice comfortable bivouac, and some distance up the rib I was delighted to hit on the very spot: a smooth little grass-patch (about the highest visible) protected from N. and E., sheltered by a big overhanging rock, close to water, and overlooking the whole length of the fine Hohlicht Glacier, with the pretty peaks of the Mettelhorn and Plattenhorn as a background.

This proved an ideal gîte, and reminded me strongly of the one poor Emil Rey invented and introduced to his patrons at the foot of his favourite Aiguille Noir de Pétéret. We soon made ourselves at home, and while Biner and I, so to speak, 'laid the cloth' and did the cooking, Imboden prospected a little; and then, after the usual meal and tobacco, we all turned in early 'far from the madding crowd' and noisy hotels, and passed a very comfortable night, with little or no wind, and the stars twinkling brightly overhead, in pleasant contrast to the new-fangled electric lights below.

Next morning I insisted on an early start, for no one quite knew what difficulties were before us, but as it turned out afterwards, needn't have been in such a hurry. By three o'clock we had eaten the usual apology for breakfast, settled with the porters, and were under weigh by lantern light. We ascended immediately, *viâ* a horrible shale-slope, and crossed the rib under which we had slept, at, I believe, the point marked 3222 in the map, and so on to the right bank of the Schalliberg Glacier in about 20 min. from the start. Here we roped, and went steadily on by the melancholy gleams of the lanterns (I always like two on these occasions, the strength of the language being in inverse ratio to that of the light), closely hugging the Schallihorn rocks, and finding all plain sailing till half an hour or so before daybreak, when it evidently became necessary to leave the rocks and take to the ice.

The upper part of the glacier is steep, much crevassed, and was described by Mr. Hornby, in his note on the pass, as 'almost a continuous icefall'; it looked much too complicated to negotiate with artificial light; so there was nothing for it but to sit down on a cold rock, shiver, wait for daylight, and wish we had lingered longer in 'the arms of Morpheus.' When day broke, however, the route was simple enough, and I took the lead for a bit, and we zig-zagged through the schrunds and upper *névé*, reaching the beautiful snow-col of the Schallijoch at 6.45.

This is a fine pass for a view, and from where we sat and demolished our breakfast we could form a very good idea of the Weisshorn glaciers on both sides of the col; though naturally the view that interested us most was our own ridge overhead. We had now got up 12,300 feet; but the *arête*, apparently entirely composed of formidable gendarmes and big rock-towers, stretched away to the summit 2,500 feet higher, and looked a sufficiently 'large order.' We could, however, see our way as far as the first three of the gen-

darmes, and were also pretty sure that (unlike my last Weisshorn experience) we had nothing to fear from the weather, always the first consideration on long ridges; so at 7.15, having taken in sufficient fuel to get the steam up, we made a start.

The two first of the towers offered no special difficulties, and if my memory serves me, both were turned on the right; the third also was easy enough, and was climbed over, and then the fun began. The fourth proved to be a really good upstanding affair; perpendicular sides, slabby, and what holds there were, placed by some oversight of nature the wrong way up. It had to be surmounted however, circumventing the thing seemed quite an impossibility, so tackling it up the right-hand corner, we climbed on to the top and right over. The fifth in order looked very difficult also, but a somewhat awkward traverse round to the right, or eastern, side fortunately saved the necessity of attempting it, or wasting time, besides leaving us a little more wind in reserve for the sixth. This we fondly hoped to turn too, but after commencing the traverse, found it must be climbed after all, and this could only be done by means of a nasty sinuous upward crack winding right up the tooth, which was the nearest thing I ever came across in real life to Willink's well-known fancy-picture 'Crack Climbers' in the Badminton series, and I hereby apologise to him for having till that moment doubted the veracity of his fertile pencil!

The next gendarme, the seventh I think, also had to be surmounted, and again touched a chord of memory. Though certainly neither as long nor as sensational as the never-to-be-forgotten ascent from the Brèche Zsigmondy on the Meije traverse, it reminded two of us strongly of the scramble up that slab from which you seem to see La Grave right under your feet. After this one it was impossible to keep count of their individualities, and I think they must have been easier; but every tooth had its own little peculiarities, and looking up at each in turn, one couldn't help thinking of Dent's paragraph, 'Such towers look very inoffensive from a distance, but a jagged, splintered crest of rock often presents very great difficulties in detail, and a single uncompromising pinnacle, though small, may bar all progress.'

This arête is *all* towers, there cannot be less than about two and a half dozen, and most of them must be climbed over; those that can be turned, for some reason or other, are always passed round on the right, and I do not remember traversing to the left (or W.) of a single one. The beauty of

the climb, however, is that you practically never leave the ridge. After clambering over one tower you generally find a nice pretty little knife-edge snow-col to cross; and then 'da capo,' at it you go again over another similar tower, but with the little variety about each that gives charm. As everyone knows, it is very difficult to remember all the details of a rock-climb; but we worked steadily upwards, occasionally varying the monotony of climbing the rocks by climbing up over each other, getting on, if anything, faster than expected, and wondering greatly that some of the numerous rock-lovers frequenting Zermatt had not forestalled us. The difficulties were fairly continuous, but the perfect condition of the mountain and almost entire absence of 'verglas' on the slabs were much in our favour; and only once (besides on the Meije bit named above) do I recall the necessity for using what the guide, who fancied his English-as-she-is-spoke, re-christened the *abominable* muscles, in addition to the more frequently used ones of the arms and legs.

After 4 hrs. of continuous work success seemed certain, and I began again to count; but this time, not how many towers were passed, but how many remained. And when a huge, conspicuous light red rock, the biggest on the ridge, and the sixth from the summit was reached, a short and well-earned halt (not entirely unconnected with champagne) was allowed. The aforesaid big obstacle looked so decidedly uncompromising that with one consent we agreed to shirk it, and again traverse just under it to the right, and in doing this I am satisfied we chose the best route; but after passing it and crossing the large couloir beyond, we made, I think, the sole mistake of the day.

What should have been done now was to follow this couloir, the big one, up to its head and finish the climb on the arête, over the last five remaining pinnacles. What we did do, was to continue the traverse some distance further at about the same, or possibly rather lower level, missing two more of the gendarmes (or three in all), then work back to the ridge by a further smaller couloir, and the ribs on its right and left, thus leaving only the three last teeth to climb over to the summit. This slight error probably made little or no difference in time, but it introduced I think the one and only little element of risk in the whole expedition. The first couloir close beyond the big red tower was crossed at a point too near the summit ridge for stones to do much harm, and we should have ascended it; but after traversing some distance further along the face, we naturally struck the next

couloir much further from the ridge, and as in addition to this it was the steeper and narrower of the two, more stones came down. Indeed, in scaling the couloir, which by the way was not easy, we had to dodge a few, and in consequence none of us fancied quite the same route up. I have therefore thought it best to record this little deviation from the strict paths of virtue for the sake of future parties. As the poet says,

‘ Be warned in time by others’ harm,
And you shall do full well ! ’

But we *didn't* come to any harm, and regaining the ridge none the worse, clambered over two more gendarmes that both took a bit of doing, up an interesting chimney, then over the very last tower, and stood, with glances of gratitude gleaming through our goggles, on the grand and glittering summit at 12.45, just 5½ hrs. from the col, including the one short halt, and without having left the ridge for more than half an hour in all.

Of all mountain tops that I know, that of the Weisshorn is, I think, the most beautiful. (When I had thus far written, I found I had all unconsciously stolen, almost verbatim, a sentence from the author whose Alpine writings I admire perhaps more than any other—I mean Leslie Stephen—so shall ask you to excuse me if I quote from him another paragraph or two, as up to a certain point they exactly convey my thoughts, and are in *his* graphic language.) ‘ It is none of the great round domes of snow where you might erect a tent to sleep in. It is formed by three of those firm and delicate edges which can only be modelled in the mountain snow, uniting to meet in a mathematical point. The three faces of the solid angle correspond to the three sides of the mountain. Curiously enough, a crevasse crossed the névé within a few inches of the top. I flattened down the little cone with my foot, and felt in its highest degree the exquisite pleasure of standing in the thin, clear, and most exhilarating mountain air, with all the Alpine world lying at my feet, from the Monte Viso to the Jura, and from the Bernina to Mont Blanc. It was warm, and absolutely calm, and only one deficiency occurred to my imagination—need I mention a glass of British beer ? ’ But no, Mr. Stephen ; here we must part company ! Our aspirations besoured beyond British beer, and it was only after some time that rebel nature re-asserted itself, with the result that the rucksacks (which had all along been quite innocent of beer) were considerably lightened.

One or two of my own reflections on the summit may interest you ; but first, perhaps, I ought to apologise for not having had any special excitement, accidents, or hairbreadth escapes to offer—this I know being a lamentable oversight in a paper of this kind. My excuse for this must be twofold. First, there were none ; and second, the Weisshorn has always had a remarkable immunity from casualties, and, indeed, as far as I know, has only been responsible for one death—that of the Bavarian climber, Herr Winkler, in 1888, who started to climb it *alone* up the western face from Zinal, and, as might have been expected, has never since even been traced—one more victim of that craze which has done to death so many of his countrymen. I think I may venture to prophesy that, as long as climbers keep to the arêtes, avoid the faces, and, of course climb together, a further freedom from accidents may be anticipated.

Our time may be considered fairly good ; but for this, as mentioned above, we had to thank the almost perfect condition of the rocks and the absence of wind. If the former had been glazed, the ascent must have taken much longer, if indeed it could have been done at all. Another great pull in climbing the Weisshorn is, that owing to the entire absence of fixed ropes, rods, or any kind of artificial aid, it is still such a good natural climb. I suppose we could hardly have expected to find any on our new route, but the eastern ridge is equally free from these bannister-like abominations, and no wag can fairly stick up such a warning as I am credibly informed was placarded this year on the top of the Matterhorn—

‘ Notice.—This Hill is Dangerous for Bicycles ’ !

While still aloft, where the hour spent seemed all too short, I should like to redeem my promise of referring more particularly to the one previous ascent of this side of the mountain—I mean, of course, Messrs. Davidson, Hoare, and Hartley’s route up the south-eastern face, finishing by the arête. This is the more desirable as, owing doubtless to a misprint, or little mistake somewhere, the illustration in the November number of the *Journal*, though it shows my track all along the ridge correctly enough, cannot have got theirs quite right, but makes it strike the south-western arête too low down—*i.e.*, too much to the S.W. When on the peak, I studied the point very carefully, and having previously read, marked, learned, and inwardly digested the note of the climb,* also

* *Alpine Journal*, vol. viii. p. 340.

Mr. Hartley's interesting paper of February 5, 1878, I found no difficulty in tracing the whole of their ascent.

Their original intention was to climb from the Schallijoch ; but having abandoned this, they determined to go right up the south-eastern face from the glacier, and the only moderately safe route they could see up that face was by a ridge to the left (ascending) of the great couloir which descends right down to the glacier from near the summit of the mountain. This couloir had to be crossed at its foot more than once, and both it and the ridge on its left (up which they went) are unmistakable. They had a lively time of it, being exposed the whole way to stones which came down the couloir in volleys, bounded from side to side, and frequently ricocheted on and off their path. (This great couloir is the same big one to which I alluded in describing my own route, and up which, just for the last few yards, I thought I should have done better to have gone and followed in their footsteps.) At its head they struck the arête, and then towers became the order of the day ; Mr. Hartley names that they turned three with much difficulty—some on the Zinal, some on the Schalliberg side—and then had to climb an apparently unsurmountable one, the last on the ridge, and within a few feet of the summit ; scrambling over which, with many objurgations, and much damage to skin and knickerbockers, they found themselves on the top. This accordingly makes just four towers they had to go over after reaching the arête, though I think it may possibly have been five ; for we counted the big red one to be the sixth from the top, and the head of the big couloir being between that and the next, the latter would naturally be the fifth.

Anyhow, their description, which I have quoted, is so exact that the number of towers on the summit-ridge and the position of the couloir locate the route exactly ; it can also be followed on any good photograph. I should not have gone over the ground so carefully but for the little printer's error above mentioned, and for the desirability of showing that the 1878 climb was more on the face and less on the ridge than shown on the recent sketch. The expedition must have been an exceedingly fine one, and probably much more difficult than mine, but unfortunately at the same time so dangerous that no one has attempted to repeat it ; while I hope and believe that mine will be frequently followed, and give as great delight to others as it did to me.

After this long digression you might think I was going to treat you in the tragic way attributed to Mark Twain's wicked telescope man, who took his travellers safely up to the top of

Mont Blanc, but then, owing to some dispute as to the terms for the return journey, 'left them there to rot.' This, however, being neither desirable nor feasible, I will hasten to bring you down in much quicker time than ours. Leaving at 1.45, we soon found that we should have all our own work to do, for there were no traces of any recent party, and no bucket-like steps ready cut. The upper snow arête was, however, soft enough to dispense with these; and though below the well-known single gendarme the ridge took longer, there was much hard ice, and the axes had to be freely used, my men knew every inch of the way, and the whole descent seemed a great contrast both to the other side and to my former experience of this one. Still I hate hurrying down-hill after a big climb, and being also somewhat tired, suppose that with frequent rests and many pipes, we were nearly four hours getting down to where the Club-hutte used to be, and about two more down the endless dusty zig-zag paths to Randa. Some way down the slopes, in taking a short cut, I almost trod upon a large and very fat marmot (and naturally indulged in the pleasures of the chase), and later on, when it was getting dusk, we watched with interest a thunderstorm playing and producing some weird effects over the distant Oberland peaks, and wondered if we should get home dry; but these were the only little incidents I recall before reaching the inn at 7.45.

By way of conclusion, I can only say that, in my humble opinion, this is the finest route on the Weisshorn, and it must certainly be the best way to cross the peak. There is no climbing half so enjoyable as that on good sound rock-ridges; and this particular expedition, especially taking into consideration the length of the arêtes on both sides, is equal to any ridge-climb in the Alps, and is well worthy to rank with such splendid ones as the crossing of the Scerscen, Bernina, and Pizzo Bianco; or the Meije traverse from La Béarde to La Grave.

SCRAMBLES IN THE EASTERN GRAIANS.

VI.

BY THE EDITOR.

What's new to speak, what new to register ?

Shakespeare, SONNET 108.

SUCH is the question I expect most of my readers will be ready to ask. And what is the answer? The Tour St. Pierre by the west ridge, and the first ascent of the western peak of the Jumeaux de la Roccia Viva—or, to appease the precisian, I Gemelli della Roccia Viva. I hardly know with what face to appear once again as the narrator of new ascents in the Eastern Graians. But if the fact that

Love is love for evermore

be any excuse for an undying passion I may plead it as mine. Even the far greater glories of higher groups leave me still a worshipper of the Grand Paradis and his brethren. Not that I have not had passing passions for other mountains. 'Tis true that this year I sought a comparatively new love; but

If she be not fair for me,
What care I how fair she be ?

We went to the Oberland—my friend P. E. Lord and myself, with François and Sylvain Pession, of Val Tournanche—but wind and sleet prevented us from completing the ascent of one of the hitherto unclimbed peaks of the Fusshörner after we had surmounted a magnificent chimney. Our rope was 100 feet, and was just long enough to enable Pession, after he had climbed the chimney in faultless style, to haul us up one by-one. Then came a strong wind, allied with eye-searching sleet, which nearly blew Pession off the ridge. The sleet changed to snow, the snow to rain, and we returned wet through to the Bel Alp.

The next day was sunless and sad. We could wait no more; we went to Zermatt. I had not till that evening a very clear idea of what the 'Vulgarisation of the Alps' meant. The truth was, as truth has a way of being, so unpleasant that we left Zermatt the next morning at three, and crossed the Théodule on a perfect day.

It was a very pleasant change from the noisy, crowded, brazen-band-tongued street of Zermatt to the pastoral simplicity of the Val Tournanche. Pession invited us to take a

glass of wine with some of his near relatives—very good wine too, made, so we understood, at Châtillon, in the vineyard of one of his wealthier kinsfolk. We were glad to gratify him. It was a pleasure to both sides, and not, like greater meetings, unattended by the interchange of compliments—pleasant also.

From Val Tournanche, with Sylvain's mule harnessed to Sylvain's chariot, and with Sylvain himself for coachman, we raced downwards. On the way we learnt many things of the rural economy of the valley, and beheld the telegraph posts which François and Sylvain had hewn

While on the steep
The woods were in their winter sleep.

So we sped to Châtillon—at times, perhaps, a trifle nearer the edge of the road than the fastidious would desire. But then, of course, Sylvain knew to an inch the wobble of the wheel. There we had the pleasure of meeting Dr. F. W. Oliver, who was, like ourselves, on his way to Cogné. The crowd had vanished, and the true spirit of mountain companionship had taken its place.

So by the night train to Aosta. Thunder and lightning preluded our departure, and pouring rain attended our arrival. I was much grieved to find that my old friend M. Vernet, of the Hôtel du Mont-Blanc, was no more. On how many occasions had he welcomed me to that historic hostelry! Never shall I forget the day when the Courmayeur diligence arrived, crowded with passengers. 'Gentlemen, do not get down; I have not a room left,' was M. Vernet's prayer as the diligence drew up before his door. Dismay was general, and no one descended but I; touching my old friend and host on the shoulder I said simply, 'I have arrived.' 'Ah, M. Yeld, it is you? You shall have my own room.'

We found the Mont Blanc as excellent as ever. Though 'non omnia possumus omnes,' Carlo, the waiter, made a gallant effort to reach that ideal. The next day we were detained by weather, but on the morrow repeated the old programme—drove to Aymaville and walked to Cogné. We arrived in the early evening, and, looking back, saw Mont Blanc unclouded at the end of the valley.

Madame Gérard welcomed us with effusion, and was good enough to say that I always brought 'bonheur'—a statement which, as sixteen people sat down to dinner on more than one evening after our arrival seemed at any rate temporarily true. It was a greater satisfaction to see that almost every

visitor—not the English only—was provided with the ‘Climbers’ Guide.’ To Cogne, at any rate, knowledge comes, even if wisdom lingers.

On the afternoon of August 18, taking with us Joseph Jantet, of Epinel, as porter, we started for the chalets of Monei, which we reached in normal time. Hospitality we found as a matter of course. I thought the cows seemed fewer in number than usual, and learnt on inquiry that, owing to the dry summer, not only were there ten cows less than usual, but that the herdsmen intended to descend on August 26. I cannot with any face talk of the view, or, indeed, of anything else connected with these chalets, after so many visits to them.

But one fact I must not forget. Amos was not the only herdsman prophet, for when I talked to our host of the weather he said, ‘Oh, it will be fine, but the wind will be strong.’

Though, good traveller, thou art not expected to ‘hovel thee with swine,’ yet this summer the mountaineer’s bed was where goats had couched. Nor were we without a share in the troubles which the dry season had inflicted on the herdsmen, for the wild hay was very small in quantity, though its piercing qualities had not suffered in the least; indeed, what was wanting in bulk was made up in piquancy. I almost doubt whether one or two bits are not in my legs still. During the night there was the usual *émeute* amongst the cows, whereby sleep was slaughtered. But then the climber, of course,

Must make content with his fortunes fit.

At 1.48 the next morning, August 19, we were off, with a glorious moon to light us. After two hours’ work up the moraine we halted to put on the rope; passed a little above the foot of the Cresta Paganini, where Pession did considerable step-cutting; and in 3 hrs. 55 min., without any hurry, reached the Col de Monei at 6.10.

As we breakfasted the wind was so sharp that Pession stamped up and down most of the time as he was eating his breakfast. The sun had little power, though we went up some feet out of our way to get the benefit of his rays. At 6.50 we started for the Tour St. Pierre by the W. ridge, and so closely did we stick to our work that the watch was never looked at till we were close under the summit. Pession’s climbing as leader was perfect, and Sylvain was not inferior in his work as rearguard, the order being Pession, I, Lord,

Sylvain. Jantet had descended to the Rifugio. How shall I characterise our work? There is—to the credit of mountaineers very rarely—the ascent taciturn, when, owing to circumstances of course beyond their control, such as rain or snow or wind, the climbers are in a state of active or passive bad temper. There is the progress jocund, when the way is not too difficult, the weather perfect, success certain, and a helpless porter furnishes the cause of wit in others. Then there is the climb hortative or interrogatory, according as ‘Venez seulement,’ ‘Avancez seulement,’ or ‘Etes-vous bien placé?’ ‘Avez-vous encore de la corde?’ may be said to be the watchwords.

To-day's work fell most naturally under the third heading.

We scrambled over some towers and turned others; between them were patches of snow and ice, some of considerable size. At least two of these were so steep as to require care, and in one place Lord and I found ourselves astride on the beautifully curving ridge. Our enjoyment would have been perfect if the north wind had been less keen; but after all it did us one good turn, as it drove away all cloud curtains and gave us unforgettable views of the great peaks in the distance north and west. And, though ‘la bella Italia’ had discarded her Coan robe for a less diaphanous vesture, the Viso asserted himself majestically and fully justified Vergil's choice of him for immortality.

In one place between two towers there seemed to be a gulf that would take a fearful time, but there was luckily a sort of narrow isthmus between them, at first unseen. At last we arrived on the Pic de Retour, so pluckily reached by Dr. Baretti* and his companions in 1865. This I had always anticipated to be the crisis of the expedition. We did not actually—though very nearly—ascend to the top of the Pic, but turned it on the Monei side by a by no means easy bit of snow work. In the earlier days of mountaineering the passage would undoubtedly have been considered difficult, and failure to pass it no slur upon a climber. The Pic du Retour once behind us, I began to think success assured, but still we were a considerable time before we reached the top. In our anxiety not to get too much to the left (that is to say, to avoid Mr. Pendlebury's route) we kept too much to the right, and finally reached the summit from the S. rather than from the W. About three minutes from the top, as it turned out afterwards, we came to a very difficult rock face, and were treated to a splendid piece of climbing by Pession.

* *Climbers' Guide to the Mountains of Cogne*, pp. 71-2.

Before we started from Cogne Pession had with much mystery exhibited to us certain wedges of wood which he proposed to take. It was something new in my experience, and I assented, little thinking that they would ever be of use. My good friend Pession, like most good men, has his harmless foibles, an affection for a certain air of mystery being one of them. Well, once again the unexpected accomplished itself. Two of the wedges were carefully inserted in crevices of the rock by Pession, and then taking off his sack, and assisted by Sylvain with shoulders, ice axe, and exhortation, in nine minutes he had by a strong effort disposed of the difficulty. We were then hauled up one at a time, making pretence to climb, and struggling with might and main. Personally I enjoyed it, though I did leave behind on the last rock a good deal of the skin of my knuckles.

We found the time on reaching the summit to be 12.6 P.M.—that is to say, we had taken 5 hrs. 16 min. from the col, with no halts worth speaking of. Say, 5 hrs. actual climbing. We had been too busy to think of taking times on the way up; in fact, as I said before, the watch was never looked at till we got to the difficult places three minutes from the top. The wind was keen, and did its best to molest our meal; but we protected ourselves as well as we could behind the cairn, and rather crowed over our success, though I much desired the genial warmth which Coolidge and I had been favoured with in our ascent of 1885.

At one o'clock we left, having decided to descend by the usual route, the north ridge. A very few minutes showed us that a serious task was before us. The wind was bitterly cold, and plenty of snow was plastered in the rocks. On a fine warm day this route is enjoyable. To-day—well, I liked it so little that I persuaded the guides [Sylvain was now leading, I next him, Lord next me, and François in the place of honour] to leave the ridge and try to our right. Here we were a little, though not much, better off. Sylvain went back to the ridge at the point where the snow or ice slope abuts on the rocks. He cut one step, and then a renewed debate resulted in his again climbing down to the right. I thought of what the couloirs on the Valeille side would be like this year, and resolved to fight against that route at any rate, but I did not like the prospect of cutting across to the ridge of the slope in the teeth of the wind. Pession afterwards owned that he had had serious fears that we should be benighted.

After a détour Sylvain returned to the snow about one-third of the way down the snow ridge. By this time the wind was

much fiercer, and the chances of our getting to any sleeping quarters for the night were rapidly growing less. It did not seem safe to try any of the couloirs below us, and the quantities of stones below the usual route to the Valeille Glacier were a plain warning; so it was decided, on my earnest advocacy, to make a traverse to the usual snow ridge, and descend to the Monei Glacier by the rocks on the further side of the col between the St. Pierre and the Tour St. André.

It was bitterly cold, and the wind, now almost a gale, blew the dry snow about with a pitiless perseverance. Sylvain, who had to cut the steps, had a very unenviable task. His beard was soon full of ice, I, as I moved slowly, was nearly frozen, while Lord was little better off behind a big rock. Patois here was fast and furious as the wind itself, and what greater sign of difficulty can be looked for? The dry snow, which seemed at times to be illuminated, cut like hail, and filled our eyes and ears. At last Sylvain reached the snow-ridge, I joined him and was untied, and Lord and Pession hastened across. The descent to the col was child's play.

I now discovered one thumb to be partially frost-bitten, but hard beating and rubbing restored it. My companion had only saved his hands by continual beating. Once on the col we were in peace, for the gale was only local. We then went down the easy rocks W. of the Tour St. André to the Monei Glacier. At the foot of the rocks we came upon a big bergschrund, and much time was spent in finding a route across it; but of this we recked little, as here the wind ceased to torment us, while the sun warmed us comfortably. While Sylvain was at work I dozed off several times; the last time I was roused by the rattle of the huge icicles he was demolishing. A big stone or two came down, but only in a half-hearted sort of way.

Once across the bergschrund we made for the Col Monei, and rejoining our tracks of the morning, just before 8 o'clock reached the Rifugio after a day of 18 hrs., about 16 of which were devoted to work. At the Rifugio we had the pleasure of meeting SS. Vigna and his companions, who were carrying out a most successful campaign without guides.

This route by the rocks is distinctly the easiest in *descending* from the St. Pierre, and was again followed by Messrs. Oliver and Hiatt Baker with Alex. Burgener a few days later on their way over the mountain from Val Piantonetto to Cogne.

Let me here reply to an objection which I have heard made by some who have climbed the Tour St. Pierre: 'Yes, the St. Pierre is a fine mountain—what there is of him; we

would there were more.' Well, let his detractors make the ascent by the W. ridge, and they will find that there is more of him.

Monday was a day of rest. The morning we devoted to the torrent, the afternoon to laziness. In the evening Jantet returned from Locana. He had been sent for wine and meat; he brought us vinegar and lard. But then he appreciated the vinegar; and as for the lard, 'twas all his fancy painted it, and even the strongest expressions of public opinion troubled him little.

On Tuesday, August 21, Pession, Sylvain, and I left the Rifugio at 4.45 A.M. to try the western and higher point of the Gemelli della Roccia Viva, which we had been forced by a thunder storm to leave unattempted, after ascending the eastern point in 1893. At starting the men wished to follow the Bocchetta di Monte Nero, but I, recollecting how steep it was, begged them to take the route round the Monte Nero himself, a bit of foresight on which I afterwards heartily congratulated myself. We found the Roccia Viva glacier much more troublesome than last year. It seemed to me to have shrunk considerably. If the mountains were abnormal in 1893, in 1894 they were still more abnormal; and when we got near the foot of Coolidge and Gardiner's couloir, on the E. of the Roccia Viva, it was a perfect object lesson in teaching the truth that no two mountains differ more than the same mountain in different seasons. The snow had shrunk much; instead of spotless white it was a dirty grey, and its centre apparently a stone shoot in full working order. That we might be under no mistake as to the state of things, a good round missile whizzed well out of it as we gazed.

Then we scrambled hastily for shelter, and went up a steepish ice-slope in unusually quick time. Once under a big rock, I believe the very one under which we sheltered from the thunderstorm of 1893, we halted to see how many stones were likely to fall, and seized the opportunity to take a meal. While we fed we saw S. Vigna and his party, without guides, arrive on the glacier by the Bocchetta di Monte Nero. They, like ourselves, soon found that the ice was by no means complaisant. We had before this seen a chamois, who at our shouts,

Stretching forward free and far,

sought the wild heights of the Monte Nero.

Our meal finished, we started upwards, and, though I

don't like being hurried, I here made no objection, but went as hard as I could. We crossed several places, more or less dangerous, at times at any rate, from falling stones, and then found ourselves on the steepest part of the mountain.

One hard place still comes back to me at intervals, for here Pession, having himself got up with a great effort and with all the help Sylvain could lend him, when I called out to him—he was then above me, waiting to help me up—‘Est-ce que je puis me fier à la corde?’ replied ‘Un peu.’ As he is an absolutely truthful man I made what effort I could to put as little trust in the rope as possible, but once certainly I hung by it and a bad handhold. I should explain that the ascent was not directly upwards, but slant-wise.

After this bit, when we were standing together, Sylvain remarked, ‘Nous faisons tout ce qu'il y a de plus difficile.’ Pession twice mounted on Sylvain's shoulder, and, to illustrate how absorbed he was in his work, I may relate that in one place, when I was standing close to him on a narrow ledge, and he was helping Sylvain up with the rope, he took a small handful out of my beard, which he had unawares included in his grip.

At 10.45 we were on the top, *i.e.* in six hours from the Refuge, of which probably something over an hour had been spent in halts. When we arrived I laid my hand on the topmost rock, then Sylvain climbed it to put a few stones together, and then I mounted it in haste by way of Sylvain's back. The view was marvellous, but, pile on adjectives as one will, a true description is still unattainable. To the plants which I found on the eastern peak I must add *Linaria alpina*, *Saxifraga oppositifolia*, *Hutchinsia alpina*, *Geum reptans*.

But we had little time for the view, as the men were anxious to be off. The wind was bone-searching, and the descent by our upward route distinctly not desirable. Thus we only spent fifteen minutes on the top. Before I moved Pession had let Sylvain down on the Roccia Viva side, and received back the satisfactory news, ‘Nous sommes sauvés.’ It was so, fortunately; but the descent was not easy. The rocks were snow-plastered, and the inclination somewhat steeper, I should say, than the north ridge of the St. Pierre. Hands suffered, but in twenty minutes we reached the top of the snow col between our twin and the Roccia Viva. Below the col in the warm sunshine

Salubrious draughts the warrior's thirst allay,
And pleasing conference beguiles the day.

Ah! yes, the meat was potted bubblyjock, and the wine Moschato; but then success tempered alike the over-sweetness of the one and the over-spiciness of the other. The men talked, to my delight, of 'la bella Italia,' 'la bella vista.'

We left this spot at 12. To briefly describe our route I may say that we descended on the edge of the great couloir, very close to the rocks of the peak we had climbed; and we wasted no time, but went at full speed. In one place I was struck by a stone on the arm, but without any serious result, though we quickened our pace and, rejoining our morning's route above the big rock, scampered along the ice-steps and out on to the glacier at a run down a slope that on ordinary occasions I should have treated with comparative respect. On the way we crossed two bergschrunds. At a quarter to one we were well out on the glacier—*i.e.* in three-quarters of an hour from our lunch place. There were no difficulties worth mentioning, at any rate in the first part of the descent.

When we got near the Bocchetta di Monte Nero I carefully examined Compton's panorama, and can pronounce it absolutely correct. Every pinnacle of rock was in its place, every curve of sky-line snow accurately indicated. Pession had said on the summit, 'If we are on the glacier by 4 o'clock I shall be content.' And content we were long before 4 o'clock.

The weather was splendid. Indeed, Pession exclaimed, 'I have never seen so fine a day.' On the col we remarked on the changes in the glacier since 1892, and leaving at 1.15 reached the Rifugio at 2.5, keeping up something of the pace we had now grown accustomed to. As we made a halt of a few minutes to take off the rope—we had with us two long ones, one of 100 and another of 120 ft.—Pession delivered himself of the remark, 'There are who mock at having two ropes. They are dix mille fois bêtes.' Remembering what the rope had done for us this summer, I fully agreed with him.

The next day we went down the Piantonetto valley to Locana, and found the flowers as conspicuously plentiful and beautiful as ever. Near Locana we met S. Ratti, the editor of the 'Bollettino' of the C.A.I., with whom we had a very pleasant chat.

We returned to Cogne by way of Ronco, where the accommodation agreeably surprised us, and the Col de l'Arietta, halting at Brouillot to see the splendid sight of a sudden storm passing over the Grivola. Our last day was spent on the Pousset ridge and the Pointe du Pousset, where, with the

famous view in all its perfection before us, we made our adieux to the great peaks.

I will conclude by saying that, though nothing is more to be deprecated than the arrival of the tourist multitude at Cogne, I was delighted to see there so many and so friendly mountaineers. Who knows of how many climbers history will in future summers have to relate—

Though Zermatt's glories did his youth engage,
He sought the Graians in his riper age ?

THE FIRST ASCENT OF THE CENTRAL AIGUILLE D'ARVES.

By BENOÎT NICOLAS MAGNIN.

[This interesting ascent, though made in 1839, remained unknown to students of Alpine history till 1878. In that year the following narrative was read by the author at the Congress of the Learned Societies of Savoy, which was held on August 12-13 at St. Jean de Maurienne. Mr. Coolidge first heard of this ascent at Valloires on July 23, 1878, and on August 13 received from the author—then a notary at St. Michel de Maurienne—the original MS., which is still in his possession. It was printed in a limited number of copies for the Congress, and is here reprinted—the readings of the MS. being always preferred to those of the printed edition—as an important document relating to Alpine history. There are certain details in the narrative—*e.g.* the cities seen from the summit—which are due to the fancy of the spectators, but the fact of the ascent is established by a curious bit of evidence. In 1876 Signor L. Vaccarone discovered at the foot of the last rocks a Sardinian coin, which had escaped the notice of Mr. Coolidge in 1874, but (as stated below) had been left just in that spot, with another coin, by the 1839 party. Mr. Coolidge found a cairn on the summit, which he attributed to a legendary Savoie, a hunter, who no doubt really was one of the MM. Magnin. But since 1878 Mr. Coolidge has publicly and frequently maintained the reality of the ascent of 1839, his own climb in 1874 having been only the first by a traveller. For full details as to the whole story see 'Annuaire de la Société des Touristes du Dauphiné,' vol. xvi. 1890, pp. 119-122. The original MS. is adorned with a quaint pen and ink sketch of the three Aiguilles d'Arves, which we regret we cannot reproduce to illustrate the present reprint.]

LE 2 septembre 1839 était une de ces belles journées au ciel pur et sans nuages. Dès la veille nous [sc. les frères Pierre Alexis et Benoit Nicolas Magnin] avions fait nos préparatifs pour une excursion de chasse du côté des Aiguilles d'Arves. Partis vers une heure du matin, passant par la montagne du Vallon, nous arrivons aux premiers lueurs de l'aurore sur les hauteurs au-dessus des Carrelets. Nous y avons fait une halte pour observer le lever du soleil sur les plus hautes cimes. Bientôt nous avons vu des rayons illuminer les neiges éternelles du sommet du Mont-Blanc, et au même instant il colcrait de ses rayons rouges la cime de l'Aiguille d'Arves du milieu, et peu d'instants après le sommet de deux pics du massif de montagnes des Hautes-Alpes au delà du Lautaret. De là nous avons traversé Combe Mianne, soit Combe Gelée, au milieu de laquelle serpente sur un pavé de pierres un

petit ruisseau, dont les eaux étaient congelées ; jamais nous n'avions vu de vallée aussi dénudée et aussi sauvage. De là on n'aperçoit aucune trace de végétation : on y est si isolé qu'on se sent pris par un sentiment indicible de tristesse, mêlée d'admiration, par la contemplation des horreurs de la Nature. Ensuite nous avons escaladé la montagne au-dessus de Bardes, recouverte de blocs de rochers cyclopéens, et arrivés au revers, nous nous sommes trouvés en face des Aiguilles d'Arves. Alors nous avons aperçu un troupeau de chamois couchés sur le glacier entre l'aiguille du milieu et celle à droite. Nous sommes partis dans l'espérance de les surprendre en arrivant à la butte inférieure du glacier. Après avoir franchi la butte nous découvrons, la carabine à la main, la surface du glacier, mais nous n'y voyons plus aucun chamois.

L'aîné des frères remonte le glacier près de l'aiguille à droite, et le passe sans incident. Le second, qui suivait de quelques pas en arrière, enfonce de la jambe droite, qu'il balance dans le vide, sans recontrer aucune paroi : sentant qu'il était sur une crevasse, il se jette en arrière (sans oser aller voir à l'orifice du trou dont il venait de dégager sa jambe), puis fait un détour pour passer le glacier sur un autre point, en sondant la neige avec la pointe de son bâton.

Arrivés entre les deux aiguilles, nous nous arrêtons un instant, et nous voyons la troupe de chamois qui remontait obliquement l'aiguille du milieu, et de temps en temps nous en voyons disparaître, d'où nous avons conclu qu'il y avait un passage, soit une anfractuosité, dans le roc, qui paraissait presque perpendiculaire et uni comme une muraille : sans cette indication fournie par les chamois nous n'aurions jamais pensé qu'il soit possible d'y passer.

Quelque temps après nous voyons bouger au sommet de l'aiguille : avec nos longues-vues nous avons parfaitement distingué que c'étaient les chamois qui y étaient arrivés.

Nous nous acheminons vers le passage qu'ils nous avaient indiqué, et nous arrivons assez facilement jusques vers l'arête du milieu de l'aiguille, et à peu près à moitié de sa hauteur, et nous nous trouvons à côté d'un couloir recouvert de glace sur une largeur de deux mètres environ. Nous taillons, avec nos pics, chaque pas dans la glace pour atteindre un banc de roc recouvert de cailloux calcinés que nous avons déblayé sur une largeur de trois à quatre mètres.

Après avoir franchi ce passage nous nous trouvons à la face S.E. de l'aiguille, qui, à notre grande surprise, présente un gigantesque escalier, dont chaque marche a une largeur, à peu près régulière, d'un mètre, sur une hauteur d'un mètre et quelques centimètres, et qui s'étend près du sommet de l'aiguille.

Par l'une de ces larges assises nous traversons jusqu'à l'arête vis à vis de l'aiguille gauche, et avançons sur la face qui donne du côté des Arves. De là il était impossible de monter.

Nous retournons vers l'escalier des géants, dont nous avons escaladé les hauts degrés, en nous aidant des bras et des genoux, et nous arrivons à environ quatre ou cinq mètres de la fine pointe,

qui présente la forme d'un vaste fauteuil dont le dossier est tourné du côté des Arves. Arrivés à ce point, notre premier soin fut de rechercher si nous y découvrions trace d'homme, et nous n'en avons point aperçu.

Nous avons aplati une balle de carabine, où nous avons gravé notre nom, avec la date de notre ascension ('Magnin, 2 septembre 1889'), et l'avons déposé dans une cavité dans le roc, formée probablement par la décomposition d'un caillou de matière friable (car la masse des aiguilles est composée d'un poudingue, soit mélange de sables pétrifiées, renfermant des cailloux roulés dans les eaux de différentes natures, les uns quartzeux, les autres schisteux, etc.) Nous y avons déposé en même temps une pièce de monnaie sarde de trois centimes, une pièce de monnaie autrichienne et une poignée de chevrotines.

Après avoir un peu mangé et pris un peu d'eau de vie, dont nous ne sentions pas la force à cette altitude, nous tentons d'arriver au fauteuil, soit à la fine pointe. Nous traversons un petit banc de roc d'environ quarante centimètres de largeur, situé sur la face du côté de Montrond, puis nous franchissons un degré de plus d'un mètre de hauteur, en nous hissant avec les bras. Nous arrivons au fauteuil, et posons nos mains sur son dossier.

Une inexprimable émotion s'empare de nous : jamais nous n'avions supposé qu'un spectacle aussi grandiose puisse s'offrir à nos yeux. Nous dominions toutes les montagnes environnantes, et par une illusion d'optique il nous paraissait que nous étions aussi élevés que le Mont-Blanc, qui nous paraissait très rapproché, et que nous voyons à découvert au N.E., et au delà le Mont-Rose, et la chaîne des Alpes s'abaissant dans le Tyrol.

Au N.O., par-dessus les montagnes des Villards et le massif de la Grande-Chartreuse, on voit distinctement la basilique de Fourvières et le faubourg de la Croix-Rousse ; l'emplacement de Lyon était recouvert d'une épaisse fumée, qui dérobaît la vue des édifices. Avec les lunettes on distinguait tous les vitraux de Fourvières et les bâtiments étayés de la Croix-Rousse, et au delà de vastes plaines.

Au levant, et sur une ligne passant au-dessus du Mont-Thabor et de Roche-Melon, on voit les plaines du Piémont et de la Lombardie, à perte de vue ; mais la première chose qui frappe la vue c'est la basilique qui domine la colline de Superga, et le chemin qui y conduit, et qu'on distingue jusqu'au faubourg de Pô, dans toutes ses sinuosités, puis la ville de Novare, et au delà du Tessin la ville de Milan, dont nous n'avons pu distinguer que le boulevard, avec une rangée d'arbres, et la façade des premiers bâtiments, le surplus de la ville étant dérobé à la vue par une vaste fumée.

Au S.E. on voyait le Mont-Viso, la Tournette, et la chaîne des Alpes Maritimes qui s'abaissait du côté de Nice, et au delà une vaste plaine bleue que nous avons pris pour la Méditerranée, et qui se confondait avec l'horizon.

Au S.E. et à l'O., seulement la vue fut bornée par les montagnes. Après avoir examiné dans tous les sens, étendus sur le fauteuil,

nous tournons nos regards vers le zénith, et nous voyons une couronne toute noire au-dessus de nos têtes, et près de la couronne un bleu très clair qui devenait plus foncé à mesure que le regard s'approchait de l'horizon.

Eblouis par ce merveilleux panorama, nous n'avons pas pensé à consulter l'heure, d'autant que le soleil était encore élevé à l'horizon, lorsque, regardant nos montres, nous voyons qu'il était cinq heures. Promptement nous faisons quelques pas de descente jusques près du degré du côté de Montrond, en face d'une profondeur perpendiculaire et vertigineuse. Nous disons simultanément qu'il faut nous tourner la face contre le roc, et nous nous laissons glisser doucement, en tenant les mains aux aspérités du roc jusqu'à ce que nos pieds recotent le petit banc de roc que nous traversons. Nous effectuons sans difficulté la descente par le passage suivi en montant, et arrivons au pied du glacier à la tombée de la nuit, et continuant notre marche, nous arrivons chez nous à une heure du matin.

Note.—Dès que nous avons approché du sommet de l'aiguille chaque quart d'heure nous sentions un pressant besoin de manger, et quelques bouchées suffisaient pour calmer l'appétit, et nous sentions l'un et l'autre un gonflement au front, et en même temps une forte démangeaison aux narines, sans doute effets de la raréfaction de l'air.

Conclusion.—Avec peu de travail et de dépense on pourrait rendre le passage facile et sans danger, et qui sait si, après l'accomplissement de ce travail, les Aiguilles d'Arves ne deviendraient pas, après le Mont-Blanc, le lieu le plus fréquenté par les touristes des différentes nations, qui y seraient attirés par le magnifique panorama qui s'y présente? (n'y attirera pas de nombreux touristes des différentes nations?)

Toutefois avant l'exécution de quelque travail on ne pourrait conseiller l'escalade du fauteuil, qui (en l'état actuel) est dangereuse, car le plus jeune des frères Magnin, qui avait alors 24 ans, plus impressionnable, à cause de son âge, pendant le mois qui a suivi cette ascension a rêvé plusieurs fois être à la descente de ce passage, mesurant de l'œil la profondeur vertigineuse de l'abîme, et se réveillait en sursaut, en sentant bouillonner le sang dans ses veines, sans, cependant, avoir éprouvé ce sentiment lorsqu'il l'a réellement franchi.

FIFTEEN YEARS AGO IN VAL FORMAZZA.

By A. CUST.

ON September 19, 1878, I looked down from the southern summit of the Basodino* on the long reach of Val Formazza, conjecturing the position of the hotel at Tosa Falls, to which I was bound. The district was then unknown to me; I had merely taken the route in

* I found a cairn near the top.

returning from Italy to Switzerland on the advice of friends, and was unprepared with maps or information. Ascending the Antabgia glen by mistake, I had scrambled on till time and an obscured view checked my upward course 9,000 ft. above Bignasco, my starting place. Unaware that the hotel nestled at my feet, and picturing it some way down the valley, I marked out for my descent a more direct course than that indicated by the cattle tracks, which made for the upper end of the valley. Brought up, however, by mist and growing darkness on a dangerous declivity, I had to pick my way back to them, having in reality been before prompted by conscience to avail myself of their more certain guidance. It has been no uncommon experience with me to be benighted, but never more helplessly than now. The darkness of a misty night grew as complete as it well could be in the open air. Yet I once remember it greater. My friend Cawood and I were descending from the Bel Alp with our baggage on a mule, yet for some reason or other without a lantern. In the wood literally nothing in the immediate proximity was discernible. The mule was thereupon put in front; the driver, holding by its tail, gave a hand back to Cawood, who in turn extended an ice axe to myself. The invisible animal went steadily down the zigzags without a pause. To return to the present occasion, I contrived, under difficulties, to adhere to the path, and after resisting the temptation to remain for the night in the dry recess under an overhanging rock, and failing to find entrance to a shed to which I came, at length reached the level ground. Just as the path then nearly lost itself a strange moving light somewhere across the flat expanse attracted my notice. Hailing without effect, I committed myself to the unknown intervening space, and found a group of men, whom I followed, expecting to shelter in a hut or village. In two or three minutes the lantern lit up the wall of a substantial building, and, before I had realised the meaning of the confused noise of water that had begun to make itself heard, to my agreeable surprise I found myself at the inn.

Remaining at Tosa Falls the next day, I was recommended to proceed by the Binn valley, and studied the route from the Italian Government map which I found. Understanding that my course would be past the Obersee (Lago Sruer), which on the map was set in a curious sort of side recess above the main enclosing rock wall of the Hohsand Glacier, after some hesitation, and hurried by the coming on of mists, I surmounted that wall, only to find the ascent a mistaken one. 'To get fun out of the position,' as my original notes have it, I continued to the glacier, meaning to descend further on, first gaining a rocky eminence that rose near to make a cairn and deposit my empty wine bottle.* A gap at the far head of the glacier meanwhile promising a more direct and agreeable course to the valley I wished to reach, I went on to it (the Hohsand Joch, as I afterwards learnt); but on the other side could

* The summit of ridge 2,926, but S. of that point as placed on the map. The glacier I first reached was really the Ban Glacier, close to point 2,973.

only see down another glacier and a bit of rock below, all the lower region, whatever it was, being concealed by mists. The general aspect, however, seeming favourable, and my compass, which formed my sole connection with the outside world, making the direction right, I descended. Mists came on, with scantily falling snow, and it was not till I was clear of the ice that a brief lift of cloud disclosed the valley.

I hit off the diligence road by a village, which I afterwards thought to be Lax. The 15 kilometres now to Brieg seemed endless, though I solaced myself with the thought that after all a kilometre was not a mile. Soon after I sighted the lights of Brieg a conveyance overtook me, which proved to be occupied by young Seiler, and I was heartily glad of the ride which he gave me.

In returning the following year (1879), near the end of September, to Val Formazza, for the purpose of exploration, I foolishly persevered, in spite of a heavy fall of snow, in the passage, new as it was to me, of the Bistenen Pass to the Simplon. Reaching the first of the two passes included in the route about noon, at nightfall I was only in the intermediate Nanzenthal (a distance of some two miles, with a dip of about 1,000 feet), vainly seeking entrance to one of the deserted huts. With a brilliant moon I set off about six for the remaining pass, but it proved a still more serious business; the deep, toilsome snow had now a thin frozen surface, which detained the weary foot, only to let it abruptly down. It is difficult to suppose anything more tiring and disheartening, while, at the same time, it precluded active motion, and I availed myself of occasionally obtruding stones to stamp off frostbites. But 'it's dogged that does it,' and, gaining the top in three hours, by midnight, in $17\frac{1}{2}$ hours from Visp, I was at the hospice.

The typical leader-writer would have depicted a solitary belated traveller nearly perishing. But solitude is a safeguard to a person acquainted with his own endurance, as, a single individual requiring all his management to see to himself when almost at danger point, the risk is increased if companions have to wait for or attend to each other.

I had never been at the hospice before, and making no one hear, though I believe I ventured to ring a large bell in the open entrance, I wandered disconsolately through the unlighted passages. Meanwhile noisy voices and laughter from the other end of the building seemed to indicate that the inmates were engrossed in jollification. At length I went to the source of the noise, and found a large room full of Italian workmen, who were the reverse of sleeping. I felt timid as to attempting rest amid so rough-looking a set; however I lay down in a corner, placing my *sac* and boots under my head for safety. Later on there was a sound of a vehicle driving up, and the still noisy gang were whirled off into the night; and, left to myself, by further exploration of the deserted passages and aid of the moonlight streaming in through the windows, I obtained more fitting accommodation.

On descending to Crevola I found an inn in the tower-like structure at the corner of the bridge which many travellers may have wonderingly noticed. At bed time I was taken down the staircase of this quaint structure, storey after storey, my conductress key in hand, as if to some dungeon, till part way down it the door was opened for me of a small bedroom.*

On this and subsequent occasions I found headquarters at Andermatten,† in Formazza, or Pommat. Returning in successive years I was led on to the endeavour to construct a map—at first from sketches, afterwards by aid of a prismatic compass—of a glacier region then practically unmapped—a work, to my grief, interrupted when it seemed to require only one more visit to complete it, along with my Alpine projects in general, and since rendered superfluous by the new Italian map.

The discomforts I endured at so humble a hostelry (Osteria Imboden), with all the friendliness of the hostess, as well as in facing the inclement condition of the Alps when closing in for winter, are a curious measure of the enthusiasm produced by such explorations. I became accustomed to village entertainment in my 'rambles in Ticino,' and in some ways felt more at ease than among tourists and waiters; it was a lonely existence, but brought me into contact with the people of the country. The dismal part, however, here was the early morning start—the turning out to a cold dressing on the rude boards of a large, scantily-furnished bedroom, followed by a scanty meal, being a Mark Tapley sort of business. Then came the weary sameness of the toil up the steep woods of the Lebeduner Tobel,‡ with the prospect, perhaps, of my projects being cut short by baffling fresh snow and insufficient daylight.

In this now deserted valley-head I spent the day in complete solitude; but on one occasion, when I had made myself comfortable for the night in the hayloft of a large barn in the lower set of

* My bill at 'Al Torre' is worth recording; it was duly made out in items, and amounted to fr. 1.95 for supper (including soup, good meat and beans, fruit, half a bottle of wine), bed, and breakfast! Since then, I believe, the little hostelry closed, and in my subsequent visits I found more luxurious quarters and a friendly, intelligent landlord at the 'Stella,' over the way. At Baceno ('Agnello'), my next halting-place, at which spot the interest of Val Antigorio, whether for scenery or excursion centres, the gorge of Foppiano, singled out for praise in a valley of surpassing beauty, seeming to me overrated, my bill was fr. 2.40 for supper (with soup, egg pudding, half a bottle of wine), bed, and breakfast (with cheese). On one occasion I stayed at the inn at St. Rocco (Soleil), and was well satisfied.

† Alla Chiesa, I. map; see Ball's *Central Alps*, p. 249. My immediate aim was to explore the route from the Lebedun (Vannino, I. map) valley to that of Binn, but I was disappointed in the expectation, to which I had unfortunately given premature expression in *Fraser*, June 1879, of finding a direct passage.

‡ The more level upper part of this side valley is rather pleasing, with the Ofenhorn terminating the vista of the higher gorge. The Italian map banishes the word Lebedun, stream, huts, and lake bearing the name Vannino. In this bilingual district there must be some curious dialectic local names—*e.g.* Minejo Krüpe, I was told, was merely equivalent in meaning to Monte Bocchetta.

Lebendun huts, I heard persons outside, who tried the door and found it fastened (with my ice axe). I must confess to an uneasy feeling, and it was with decided relief that, after they had again tried it and called out, I heard them go away without noticing my reply. In the morning I found it was a party of hunters or poachers, who had gone on to the upper huts. I now fraternised, and as I remained in the hut with one of them, after the others had gone out, he praised my wine bag, and at length asked me to give it him, a request which I naturally refused, as it was of use to me. He repeated the request in the tone of a man who did not want to be refused, and I more firmly declined, though a little uncomfortable in sight of his gun. However he said no more. It looked like an attempt at virtual robbery, and I hope the experience of 'coveting' is unique in Alpine travel.

Another time when I passed the night at these huts it was earlier in the season, and the herdsmen had not gone down. They were friendly-disposed, and gave me of what they took themselves, but that seemed mighty little. The first proceeding on inviting me indoors was to hand me a small spoon; the others had each one and were standing round a large caldron of slightly-warmed milk coated at the top. Into this we dipped and took *ad lib.*, though the others mostly took little or none, only one keeping me company. When I desisted the caldron was swung over the fire, and incessantly stirred with a wooden ladle, or rather pronged stirrer. Access was gained by a ladder to the upper storey, in which we were to sleep. The first to mount was a small dog, which being placed on the steps managed to get slowly up. The men meantime beguiled the time with singing. A bed was prepared for me, the rest followed at various intervals, and soon we were all lying side by side on the hay, three herdsmen, a young woman, and the dog forming the remainder of the party. I had, however, a rug and a sheepskin to myself, though a knock of my neighbour's elbow into my ribs reminded me occasionally of his proximity. The young woman was safely wedged in between two of the herdsmen; what became of the little dog I did not know, but I attributed the movements of something in the dark in the neighbourhood of my face to a roving propensity on its part. Smaller animals were, of course, numerous, but I managed by this time to sleep through them, having become reconciled to them, especially for the sensible habit I had noticed of retiring to their own rooms at an early hour after dinner. Some of them certainly appear to make a breakfast also, but they too withdraw before daylight, and so do not accompany your travels. Before retiring the men brought up to the loft a hot bowl as the result of the stirring. I was handed a ladle and again was left alone with one rival in relish for a repast which I was not sorry for. But it was little for hardy men to sup on. I cannot speak to their morning meal, as I went before it.

Before me on this occasion (September 7, 1880) lay a much thought of project of crossing a small glacier on the southern flanks of the Ofenhorn (now Arbola Glacier), over which seemed to lie

the only direct pass to be found to the Binnen Thal. Ascending the glacier between the Ofenhorn and the Punta del Forno (now Forno Glacier), which I had explored the previous year,* I took to a snow gully in its western wall, which, as it grew steeper, I left where practicable for the side on my right. At one such spot, high up where the snow was very steep, the thought occurred to me, 'Now this is just the place one might go backwards, and so headforemost down the gully.' The next moment the little knob of rock to which I was holding with my upper hand came off, and I swung back to near, but not quite, the balancing point. My other holds were sufficient to preserve the balance, which, in fact, a very slight hold will do. I now crossed to the rocks on the other bank, by which I found easy access to the top (in about 4 hrs. in all from the huts).

The glacier (Arboia Glacier), at whose edge, as I had hoped, I now found myself, seemed to offer no difficulty, and proceeding to the terminal summit of the mountain spur (in direction S.S.W.†) on which I was, overlooking its lower end, I saw that I could easily reach a low gap in the rock-ridge beyond it at the head of the Binnen Thal. Unfortunately the day was clouding over, and a bitter wind robbed me of the pleasure which the elevated position combined with the prospect of success should have brought. After some hurried observations I returned to the pass (Ofenjoch), and set off for the summit of the Ofenhorn, it being freezingly cold on the way.

In crossing from the ridge on my right, which I had kept near, towards the final ridge of the mountain at the head of the glacier, I suddenly became conscious that I had one foot in a crevasse, which means worse than 'one foot in the grave.' I have often thought since that of all deaths, short of physical torture, the worst would be one of the mental torture which a solitary man would undergo, aroused to a sense of his foolhardiness on finding himself resting in the minor discomfort perchance of cold and trickling water and cramped space on a ledge of ice, part way down a crevasse, with the brilliant blue sky through the opening above, in a cruel, hopeless silence, till the blue faded from the sky and the stars slowly crossed the opening, looking down with unpitied eye. He might console himself with wondering whether if he wrote a page or two of diary it would come out in a hundred years or so at the foot of the glacier, and then calculate the distance and time it would take till he counted himself to sleep. Thus twice that day did I nearly see Cerberus and the dusky realm of Pluto.

* I then reached the gap at its head (Forno Pass), but could not cross it till the autumn of 1881, when I went over it from Baceno to Lebendun. To reach this pass from Binnen Thal ascend an easy grass gully to the first gap seen left of the Albrun and not much higher than it; then on the other side follow ascending paths across the side ridge to the left, and, skirting the base of the rocky point 2,582 (S. map), continue without intermediate descent along terraced ground to the plateau at the foot of the final débris gully leading to the pass.

† The account (*Alpine Journal*, vol. x. p. 93) is incorrect here. The 1885 I. map clears up all this region.

Reaching the top in less than half an hour from the col, I commenced taking observations in a sheltered place behind the cairn, but the cold was excessive, the weather more and more threatening, and not caring to be caught in a snow storm, I ruthlessly cut short my angles, to be continued on a more propitious occasion, and in some ten minutes was back on the pass.

A quarter of an hour brought me across the glacier and down to the gap I had marked. It was a quaint little gap choked with huge pieces of rock, which, having been warmed by the earlier morning sun, gave me back a grateful heat. Looking over the other side, I saw that there only remained easy slopes, so, the pass mine, I promptly returned, well contented, to the warm rocks, to select a comfortable spot for a meal.

The snow slopes below the gap led me to a tiny glacier, the smallest I have seen, though containing, I believe, a crevasse.* My return way to Tosa Falls was now by the wearisome ordinary route of the Albrun, Minojo, and Neufelgiu Passes, which being new to me I wished to explore, the toil up the latter seeming endless, but once on the top I set off to race the daylight, it being now about six, and in an hour was at the hotel.† A short way below the summit I surprised three chamois within a stone's throw. Two went off; the third stood and looked at me and its companions in a puzzled way, at last making off in another direction.

I had noticed near the foot of the Forno Glacier a small side-glacier descending into the head of the Lebendun (Vannino) valley from the ridge of the Ofenhorn, an overflow, in fact, of the icefield above, which promised the easiest access to the mountain on this side, and on September 2, 1882, tried the route with Pierre Zertanna, his brother, the acting landlord of the jointly-owned hotel, volunteering to accompany us. Passing the Obersee or Lago Sruer and crossing the low ridge beyond it to the S.W., after brief trial of the glacier, we ascended its left bank ‡ and came out high up on the névé that covers the mountain slope, by which we had easy access to the final ridge.

* From Studer's description it was in 1864 evidently larger, and, indeed, apparently united with the upper glacier in Eggerofen.

For this little notch ('Einschnitt') in the ridge, whence, Studer writes, 'in a couple of paces we found ourselves on the upper firn,' the name Eggerofen Thor might be preferable to Arbola Glacier Pass; but I see in 'Clumbers' Guides' Eggerscharte given as an alternative. This rock-ridge bounds the Arbola Glacier, forming the international frontier, as shown on the I. map, and the S. Map (1889) is quite wrong in removing it and making the glacier partly fall into the Binnen Thal.

† In 4 hrs. going from the Albrun Pass.

‡ This buttress should be ascended directly on the side away from the glacier. I believe this way will be found preferable to that by the lower and larger outlet from the same icefield leading to the Lebendun Pass. It was not known to my companions, who, however, seemed unaware of any routes up the Ofenhorn except on the Binnen Thal side. Our times were: start, 5.53; Neufelgiu Pass, 7.47; rocks above side glacier, 9.47 to 10.12; summit, 11.30 to 3.45; foot of Hohsard Glacier, 5.7; hotel, 7. In passing the Neufelgiuhorn Pierre told us that he had ascended it.

On the summit, where the landlord took a willing and intelligent part in recording my observations, we were favoured with one of the most beautiful mountain effects I have seen. Fine as the day was, a mass of clouds persistently clung to the Italian side of the main ridge of the Alps, to the south-west of us, here peculiarly wild and jagged, rising just up to the top, and there contrasting in its mysterious cloudland beauty with the rugged peaks showing themselves on the Swiss side. From our superior height we looked down on the scene, the whole being in full sunshine—a delightful sight, felt even, I think, by the impervious sons of the soil. When at length they proposed to descend, I mustered sufficient German to say, 'Wir sind in Himmel; warten wir,' and they did not dispute either clause of the suggestion.

In descending we retraced our steps till we approached the rocky ridge falling north-east from the summit, when we crossed it to the snow-slopes on its further side. By this time mists covered the lower part of the mountain and glacier below, in which we were soon enveloped. The way was new to all of us, but my previous observations of the locality made me confident that we should succeed in emerging on to the lower glacier. So we felt our way down and among the crevasses on the glacier. From time to time I pulled out my compass, which had an effect on the confidence of my companions, who proceeded not without many an exclamation, though, as it pointed in a different direction from what I expected, I left its admonitions unheeded. We came out of the clouds, to our mutual satisfaction, exactly where we wanted to be, some way down the main ice stream of the glacier. I gave them the remains of my brandy flask, and they were happy men for the rest of the day.

For exploring the lofty region at the head of the Gries Glacier I discovered a convenient highway in a side glacier (now Siedel Rothhorn Glacier), descending thence into the Hohsand ravine. At its foot, without being traversed by its stream, lies a curious, long, and very level plain, floored with fine debris, with occasionally island-like mounds of grass, and a bounding ridge of the same on the side of the ravine. Here I fell in with a herd of chamois, who, instead of running away, remained, as if accustomed to me or knowing the difference between a gun and an ice axe.*

By this route I reached the Siedel Rothhorn † and Blindenhorn in the autumn of 1881, returning in each case the same way. On the latter mountain I remained from 1.45 to 5.30, which at that time of the year must have been close on sunset. It has two lower summits on the north, so distinct in appearance as seen from the

* The neighbouring hut is appropriately called Gemsland on the new I. map. The shortest way from Tosa Falls is by a brief and easy ascent to the plain from the vicinity of the Zum Sand hut. A pleasant alternative entry to the Hohsand ravine may be made by crossing the bridge at Morast and taking a track above the rocks on the left bank of the gorge, reaching the Zum Stock hut by a slight descent.

† I found, if I remember right, no trace of a cairn here.

highest point that, being unnoticed on the map, I took them for the Merzenbachschien, the next mountain marked down the Gries Glacier. Afterwards discovering that they were intermediate summits, I ascended both on August 31, 1882, accompanied by Pierre Zertanna, going by the Siedel Rothhorn Glacier and returning by the Gries Glacier. On neither was there trace of a cairn.*

IN MEMORIAM.

✓CAPTAIN MARSHALL-HALL, 1831-1896.

CAPTAIN MARSHALL-HALL, born in London, February 6, 1831, was the only child of Dr. Marshall-Hall, the eminent physician and physiologist; he was educated at Eton, and at Caius College, Cambridge.

From his youth he was a passionate Alpinist, inheriting this ennobling taste from his mother, who was an enthusiastic mountaineer until she was over eighty years of age. He accompanied his parents on their annual visits to Switzerland, and in 1849, when only eighteen years old, he was the first to make the passage of the New Weissthor from Zermatt.† In 1867, with Mr. W. Leighton Jordan, and with Jean Couttet as chief guide, he made the second traverse of the Aiguille de l'Eboulement.‡ Later on, from 1878 to 1884, he resided with his family six years in Switzerland, passing the winters at Montreux, the summers in high stations of the Valais—always interested in every aspect of Nature, and specially in glacier observations. He then often contributed original notes to the reports on glacier variations issued by the writer of these lines; and later, in 1891, when living at Parkstone, Dorset, he continued to follow up this subject with great eagerness, and obtained from the Alpine Club the formation of a committee (Sir Martin Conway, Professor T. G. Bonney, Captain Marshall-Hall) charged with the care of studying the oscillations of the glaciers in different parts of the British Empire. He wrote many reports on the subject, § and obtained the official co-operation of the Colonial Administration for the study of this important phenomenon. At last, in 1895, at the sixth International Geological Congress, at Zürich, he initiated the formation of a committee for studying the variations of glaciers in the whole world (Commission Internationale des Glaciers). He was himself elected as representative

* They are shown on the 1889 map with height 3,334 m. for the southern and slightly higher of the two. The short ridge, rocky except at its north-east end, of which they form the ends, presents a separate appearance on the Gries Glacier side, the upper snow of which extends to the uneven brim of the depression parting it from the highest point (3,334 m.), the more so from their not being in line with the latter, but really forms part of the precipitous frontage of the mountain over the Blinden Valley (see Imfeld's panorama from the Eggishorn).

† *Alpine Journal*, February 1879, p. 175.

‡ *Ibid.* 1894, p. 65.

§ *Ibid.* 1891, 'On Glacier Observations,' &c.

of Great Britain and the Colonies in the Commission, and worked with youthful enthusiasm and activity.* He was, it may be added, a member of the English, Swiss, French, and New Zealand Alpine Clubs.

The activity of Marshall-Hall was not by any means exclusively devoted to Alpine studies, but showed itself in many different directions. He had studied law, and was called to the Bar, but an always discouraging deafness prevented his practising as a barrister; hence the greater part of his life may be said to have been spent in the ardent pursuit of scientific studies. A Fellow of the Chemical Society, and of the Geological Society; a member of the Geologists' Association, of the Royal Microscopical Society, of the Agricultural Society, of the British Association, and of the United Service Institution, also of the Dorset Natural History and Field Club, he maintained a life-long interest in the aims and work of all. Possessed of great mental elasticity, he was no mere dilettante in the various branches of science to which he was attracted, their number, indeed, being rather the index to the keenness and thoroughness with which he entered into all matters of scientific interest.

He was moreover an enthusiastic yachtsman; in 1870, shortly after the fruitful expedition of H.M.Ss. 'Lightning' and 'Porcupine,' he undertook a dredging cruise in his yacht 'Norna' to the coasts of Spain and Portugal, accompanied by Mr. Edward Fielding, and by Mr. Savile Kent, of the British Museum. The Royal Society contributed 50*l.* towards the costs of this expedition, the most important results of which were made public by the last-named gentleman.†

Marshall-Hall was a magistrate for Wilts, in which county he had property; in his youth he took great interest in the militia, and joined the Royal East Middlesex, from which he retired with the rank of captain in 1872, owing to his increasing deafness.

The numerous friends of the deceased will long remember his uniform kindness and cordiality, the ardour and activity with which he threw himself into all the old and new questions which excite the intellectual curiosity of man. A Christian by conviction, often has he said how the more he knew of science and its marvels the stronger grew his faith in God and His revelation. His death took place suddenly at his home at Parkstone, April 14, 1896.

F. A. FOREL, A.C., S.A.C.

Morges, Switzerland : June 1896.

We regret to have to record the recent deaths of Mr. CHARLES PACKE, formerly Hon. Secretary of the Club, an enthusiastic botanist, and author of the 'Guide Book to the Pyrenees,' and of Mr. C. D. CUNNINGHAM, who was connected with Captain Abney in bringing out 'The Pioneers of the Alps,' and with the late Sir F. O. Adams in preparing 'A History of the Swiss Confederation.'

* 'The Study of Existing Glaciers,' *Natural Science*, January 1895.

† *Nature*, iv. 456, 1871.

EXHIBITIONS.

I. PHOTOGRAPHS.

THE experiment, rendered possible for the first time by the new rooms of the Club, of dissociating the photographs from the annual exhibition of paintings and drawings as a whole proved successful. The photographers unquestionably had no cause for complaint, while there can be no question that the work of the artists was seen to much greater advantage when there were no photographs to distract the attention of visitors. In the matter of paintings oil and water mix effectively enough, but the addition of photographs also always seemed out of place, and even at the nineteenth-century Art Galleries last year produced an effect of incongruity. It appears hardly fair, however, to have the photographic exhibition in the summer months, when the light is at its best, thus relegating the paintings to the darkness or the artificial light of the winter months, and in future years we hope to see the dates altered. Perhaps a still better arrangement would be to have the picture exhibition in some month such as April, and the photographic exhibition a few weeks later.

The great majority of the photographs contributed were the work of members, though the exhibition was not confined to them. The list of exhibitors was fairly representative, though there were some notable absentees. Captain Abney sent only a few studies of the 'climbing foot,' taken for the purposes of book illustration; we looked in vain for any of his superlative winter photographs. The ladies either were not made aware of the Exhibition or forbore to cross the austere portals of the Club. We would have welcomed work from photographers such as Miss Moysey, and we were sorry to miss any examples of Mrs. Main's admirable skill.

At the present moment, at any rate as regards exhibitions, there would seem to be two schools of photography, one of which aims chiefly at technical excellence and purity of method on the lines encouraged by the Photographic Society, while the other, which seeks after new departures and employs any kind of method calculated to give a pictorial effect, finds its home, where it illustrates its principles and its vagaries, in the Exhibition of the Photographic Salon.

Judging by the late exhibition, the views promulgated by the new photographic school either do not lend themselves much to mountain photography or do not find much favour. Some of Sir Martin Conway's enlargements, however, are such as might have been seen at any exhibition in the Dudley Gallery. Photographs of distant mountain panoramas with much sky, and dealing with early dawn or sunset effects, are extremely difficult subjects; and even when the resulting picture is attractive it is difficult to be sure that it is in the least like what the photographer expected. But at least Sir Martin Conway's photographs were not in any hackneyed style, and aimed honestly at reproducing the effects which attracted him

as beautiful. His views were not very well treated by the hanging committee, and were very much spoilt by having large white labels stuck on to the glass, but some of them were very effective.

Photographs of mountain scenery labour under the great disadvantage of having very little human interest. It is a very rare thing to find any figures or life of any sort suggested without spoiling the picture. Of climbing photographs we noticed but two examples—one an interesting portrait group of Dr. Wills's, and the other a snap-shot of a climber negotiating the famous 'jammed-stone' couloir on the Kleine Zinne, by Mr. P. A. L. Pryor. Whether this was intended to have any reference to a remarkable illustration that appeared in a recent Alpine work we know not. If such was the case the print suggested that descriptions of Dolomite climbs, characterised more by fervour than prosaic accuracy, need rather to be illustrated by Alpine artists in their more emotional moods than by the photographer.

The tele-photographs by Mr. Hoddinott were rather disappointing, and it seems that much further work is required before this form of lens can be made of much use practically in the mountains. Mr. Dallmeyer, when he first described his tele-photographic lens at the Society of Arts, gave it as his opinion, in the course of the discussion, that the lens was unlikely to fulfil the expectations that had been formed of it in some quarters with regard to mountain photography. He believed that there was always likely to be considerable blurring of the picture, owing to the long exposure required and the refraction produced by the variations of temperature in mountain landscapes made up of alternate snow and rock, valleys and heights. Such blurring, while commonly present, does not apparently succeed in giving softness to the picture. Much, evidently, depends on the choice of an appropriate subject. Thus a view of the Matterhorn from the Zmutt Bridge, taken with one of these lenses, was surprisingly successful in destroying all sense of atmosphere and distorting the mountain, producing the same effect as a photograph taken with a short-focus lens from the Hörnli. Far more effective, because a more suitable subject, was a view of the Moming Rothhorn taken from the Riffelalp. Mr. Lamond Howie contributed an interesting view of Ben Nevis in winter time. This was taken as a panorama, and required a good deal of retouching at the joins of the several prints. Geologically, however, it was a very valuable photograph.

Of the direct photographic work in which Mr. Donkin excelled so greatly Mr. Woolley's 'Ailama' was one of the best examples—a very fine photograph indeed of an excellent subject, in which the modelling of the snow, the massiveness of the hanging glaciers, and the solidity of the mountain were brought out to perfection. Most of Mr. Woolley's examples were of Caucasian subjects, chosen deliberately from the topographical point of view. All were marked by the high degree of technical excellence we are accustomed to see in his work.

Of good technical work there were few photographs in the

exhibition better than Mr. Spencer's. His small views included a very admirable panorama from the Aiguille Verte and some excellent studies of sun and shadow and modelling of snow taken in winter time at Chamonix. Among the best, to our mind, were two views of the Aiguille Verte and the Aiguille des Charmoz. In another frame was one of the best photographs of the dirt-bands on the Mer de Glace that we can remember to have seen. Mr. Shea showed a striking enlargement of a study of Dolomite rocks on the Pelmo, but his views were rather spoilt by over-enlargement. Among much good work from Mr. Holmes we noticed especially the 'Dent des Bouquetins,' a photograph which combined admirably a really pictorial effect with a direct reproduction of a high Alpine scene.

Signor Sella contributed too little, unfortunately, but the few examples which he had showed off his admirable skill to advantage. The effect of a hot day in producing a vivid sense of atmosphere was well shown in his photograph of the 'Punta Gnifetti.' Too great accuracy in focussing, or the employment of lenses of too great depth of focus, in such a manner as to show off their capabilities to the utmost, often spoils Alpine photographs. The pictures become hard, and fail altogether to 'make a hole in the wall.' The atmosphere, the sense of distance and scale, disappear entirely. Slight veiling, as photographers term a result of over-exposure, is often very efficacious in correcting these defects. Of this fact Signor Sella shows that he is fully aware and occasionally utilises it with great skill. Signor Sella seems almost the only man who is able to introduce figures effectively into his pictures. Some transparencies of Caucasian and Alpine subjects from the same hand were taking, but hardly improved by being tinted. In one of these, a view taken above Gressoney, the clouds were superb and required no colour to heighten the effect. We would gladly have welcomed more sky and cloud studies, such as M. Loppé has so often exhibited. Several photographs showed the familiar scene of a sea of clouds, as seen from above, lying over the Italian valleys or over the Swiss lakes; in fact, this effect was repeated so often as to become quite monotonous. The most successful, to our mind, was one of Mr. Eccles's characteristic studies; but by far the best contribution of Mr. Eccles was a winter view taken near Rosenlauri. It was almost impossible to exceed the delicacy of the snow modelling and the transparency of the winter shadows exhibited in this photograph. There still seems a considerable tendency among Alpine photographers to choose only subjects to which distinctive titles can be given, and it was quite refreshing to meet with Dr. Pasteur's autotype prints of village scenes. Excellent as pictures, they avoided most discreetly the fault, so common, of endeavouring to include too much in the photograph. Good work was also contributed by Mr. E. J. Garwood and Mr. Brushfield. Nor must we omit to mention a striking little view, by Mr. J. Walker, of the Dent Blanche at sunset as seen from the Mountet Hut.

Photography, as much as pictorial art, exhibits personal idiosyncrasies: we can often recognise at a glance the work of different men. There is the portrait photographer, who takes a great peak in its best aspect; there is the topographer who gives us a whole range, careless of its picturesque capabilities; there is the sporting climber, who depicts only what the Germans call 'detail pieces,' with a view mostly to the illustration of his own or his friends' exploits; there is, lastly, the mountain impressionist, the man who recognises beauty and aims at reproducing it.

Two frames of photographs contributed by Mr. Clinton Dent are remarkable as proofs of the advance made in converting topographical representations—such as we were all (except, perhaps, W. F. Donkin) content with a few years ago—into pictures. In one sense this tendency is hostile to topography, for to avoid distortion it often limits its field, it is ready to sacrifice detail in order to secure passing effects of mist or sunshine. Two or three of the Caucasian views of Mr. Dent are eminent examples of happy selection of time and place. We prefer Ushba above the birch-tops, the white horn of Tetnuld lifted between earth and sky, the shadowy vale of the Laila, where the glaciers fall in avalanches into a garden of lily and rose. Hardly less novel or less beautiful are the winter studies of snow and storm and low sunshine from the familiar, and in summer monotonous, valley that lies under the shadow of Mont Blanc.

II. MR. A. D. McCORMICK'S CAUCASIAN SKETCHES.

The new Hall of the Alpine Club, with its abundant wall-space and excellent lighting, is admirably fitted for a picture gallery. We may look forward to periodical exhibitions, in which the work of the artist members of the Club will be more frequently than in the past brought under the notice of climbers. Will this be for the benefit of Alpine art? An affirmative answer may seem obvious; but a paradoxical person might, we think, find a good deal to urge on the other side.

In so far as our criticism tends to recognise and condemn unrealities, to put an end to the muddled memories of Alpine scenery which used to pass muster with a public no better instructed than its painters, it will do good service. But, on the other hand, it might be plausibly argued, the artistic perceptions of the average Alpine Clubman are exceedingly limited. He looks on mountains primarily as climbs; he estimates views by quantity, by the miles he can sweep over with his 'circumambient eye,' and cares only for 'the blue, unclouded weather,' most favourable to his pursuit. His ideal is a photograph which shows the crack up which he wriggled, or the chimney in which he cut steps. He finds relief from the too oppressive grandeur of Nature by asserting his own place in the foreground, and that in attitudes which might make an angel, or any winged creature, weep. For such clients are painted the canvases that send the artist away sorrowful; for them

are made the drawings which are in reality diagrams—drawings which, carried to their highest excellency, can only represent the intricacies of a great peak, as Denner represented an old woman's wrinkles; for them are prepared the book illustrations, which are, in fact and intention, reduced posters.

'Do not,' our *Advocatus Diaboli* might continue, 'let the Alpine climber think that he is a serviceable Art-critic. What gain there is must be all on the other side. The test of genius is to widen the scope of human sensibilities. It is a work of time, for which reason the genius, if an artist, frequently starves; if a religious reformer, is stoned or otherwise put out of the way.'

Modern painters have learned and taught the beauties of the sea. The glories of the great mountains offer them a field for further successes. But it is not the aspect which strikes the average climber that will most attract them; they will hardly notice the details that are all-important to the man who has 'to do' a peak. It is not the moments of calm weather that will fascinate the modern painter. 'See the mountains, their infinite movement!' cries the poet. It is the movement, the atmospheric gradations, the alternations of colour and light and shade, the framed visions of peaks, the enchantments of whirling sunlit mists, upon which the impressionist naturally seizes. He listens to his climbing friend's criticism, and murmurs, perhaps, under his breath the familiar lines from the 'Mikado'—

His taste exact
For faultless fact
Amounted to a disease!

We are not at all disposed to adopt this pessimistic view of the Club's relation to Art. But it may be open to doubt whether Mr. McCormick's Caucasian sketches will satisfy the average climber, or even the travelled mountaineer. Our first feeling, we confess, was one of disappointment. Where were the great peaks we had seen or read of, the cathedral towers of Ushba, the spire of Tetnuld, the sky-cleaving pyramids of Dykhtau and Koshtantau? Mr. McCormick has turned his back on the obvious. He has been most impressed by the peculiar colouring and atmosphere of the Caucasus—the purples of the hill-sides, the orange splendour of the rainy sunsets. He has emphasised the broken weather, which often, though not always, meets the traveller. His collection might have been called 'Notes and Studies of Caucasian Atmosphere.' Elijah Walton would have delighted in the mountain forms and the snow and ice draperies—far more ample than those of Switzerland—that cover them. Mr. McCormick cares more for the valleys—for effects, for movement. He uses details, whether of flowers or architecture, sparingly, and mostly when they serve in his scheme of colour. The inhabitants he has left out—reserved, we are glad to hear, for a further Exhibition of Black and White Studies.

Going round the walls we noticed (2) A storm gathering on

Tetnuld, with a window of clear sky beyond, very characteristic of Suanetia; (4) 'A Corner of the Village: Teeb,' the best architectural drawing shown; (19) 'Driving Home the Flocks,' a very successful and harmonious composition; (40) 'The Shreds of the Storm: Karaul,' a vigorous and accurate study; (57) 'Icefall of the Tintium Glacier,' which, perhaps, needs more detail in the glacier; and (61) 'Giulchi from the Dykhsu Gorge,' a capital sketch of a peak that can inspire even the most unskilled hand. Ushba appeared only in a single sketch, which was shown in a somewhat rudimentary condition.

Mr. McCormick is, we are convinced, an artist of much feeling and sincerity. We take what he has given us with gratitude, and hope for something more in the future. Let him go on seeing Nature in his own way; but let him try to be less content with first impressions, and to become more intimate with his subjects.

NEW EXPEDITIONS IN 1895 (*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 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.]

NORWAY.

Söndmøre District.

STORHORN, about 5,200 feet. *August 2.*—Messrs. W. Wareing, J. E. Sunderland, and J. S. New, with Sivert J. Bjerke as guide, ascended this mountain direct from the foot of the upper lake on the Kalvatn road by steep wooded slopes to a broad arête N.E. of the Lauedal and the little aiguilles which bear the strange name of Kjerringkjøfter, or Sweet Hearts-lips, and gained the summit 6 hrs. after leaving Bjerke. The view over the Hjörund fjord, whose glassy waters reflected the many serrated ridges and sharp peaks which overlook this, the most beautiful of all the Norsk fjords, and of the glistening snowfields of the Justedals bræ, was superb. The descent was varied by a détour to the Lauedal.*

TBOLD HORN AND KVITHÖVD, each about 5,000 feet. *August 6.*—The same party, without Sivert, left Bjerke at 2.50 with the object of exploring the unknown recesses on the north and east sides

* Rander's *Söndmøre*, p. 46.

of the Storhorn range, which contain several steep glaciers and rugged peaks which rise with shoreless precipices out of the icy waters of the Tysse vand, and which face Horningdalsrokken (the Spinning-wheel of Horningdal), first ascended by Capt. J. R. Campbell,* and Kviteggen,† the culminating point of Söndmøre. This programme was very fascinating, and its execution most successful. The party followed the path by the Tysse fos, and after passing through the wild gorge at the head of the waterfall and fording the river issuing from the Tysse vand, they turned S. up some grass slopes to a tarn headed by a large glacier, the Tysse vand bræ. They stepped on the ice at 8.7, and for some time followed a small medial moraine, and then an almost unbroken slope of ice at a constantly increasing angle, where they put on the rope. Then they were confronted by an ice-fall and great crevasses, which extended nearly across the glacier, where much time was lost in threading their way. At last they came to a crevasse which was bridgeless and could not be jumped. On the west bank a rock spur protruded through the ice, and where it dipped into the schrund a ledge narrowed the gulf, and by this means the party got across to the rocks. After climbing about 150 feet their way was barred by a hanging glacier. Two courses alone were open, either to ascend a snow couloir, down which both ice and stones occasionally fell, or to abandon the expedition. The former course was chosen, and Wareing led the party very cleverly close to the left-hand wall, with about 60 feet of rope out. Then they took to the rocks again for 400 feet, and were forced to cross the couloir by an awkward ledge partly under the ice. The rocks then became easier, and they turned S.E. towards the séracs of the main glacier above its great icefall. Sunderland here took the reins, and at 3.45 they reached a little col. North-east were three fine peaks, the middle one, the Troid Horn, the most tempting of the three. After some interesting rock-climbing they reached the top of the latter at 4.15. The Troid Horn almost overhangs the weird waters of the Tysse vand, and afforded a glorious view. After the inevitable cairn was built they returned to the col, and seeing a snow dome W. they imagined it to be their old friend the Storhorn, and climbed it, but then found that the Storhorn lay further W. over an undulating snowfield. They built a cairn, and the mountain now goes by the name of Kvithövd. As clouds began to form, they decided to cross over to their old route up the Storhorn, and by this means they sped along quickly downwards to within 2,000 feet of the Kaldvatn road, when, by bad luck, the leader took them to the top of an impracticable rock face. By trying to evade a direct return they got more and more astray, and much time was lost and desperate scrambling was resorted to before the error was repaired. Finally they reached their hotel at 1.30 A.M., after an absence of

* *Alpine Journal*, vol. iv. p. 28, also *The Year Book of the Norwegian Club*, 1896, p. 29.

† *Alpine Journal*, vol. xiv. p. 509.

22 hrs., of which barely two hours were devoted to halts. The Hjörund fjord district is a most fascinating one for the mountaineer; and since clean beds and good food have taken the place of the dirt and starvation which fell to the lot of earlier climbers, mountain exploration is now proceeding very rapidly. The mountains themselves, which are composed of gneiss, whose beds dip down from N. to S. at an angle of about 45° , remind the writer very much of the Coolins, in Skye, only the corries hold glaciers, and in place of valleys, generally there are fjords and tarns. True it is also that the inhabitants, who are the descendants of two canny Scots who married Norsk girls and repeopled this district after its complete depopulation by the 'Black Death' in the fourteenth century, can testify that they know what rain is.

WM. CECIL SLINGSBY.

ALPINE NOTES.

GAPING GHYLL (YORKSHIRE).—On May 9 Mr. E. Calvert, and on May 10 Messrs. E. Calvert, T. Gray, T. S. Booth, J. A. Green, S. W. Cuttriss, and Lewis Moore, made the descent of this well-known chasm by means of ropes and windlass. The exploration of the main cavern at the bottom led to the discovery of passages leading from the two extreme ends, and at the tops of the great slopes of fallen rocks. Another cavern was found along the N.W. passage, and a branch of the S.E. passage followed for some distance, but the limited time at the disposal of the party did not permit of very extensive explorations.

On May 23 to 26 Messrs. Calvert, F. Ellet, Booth, Green, Cuttriss, J. W. Firth, and W. Cecil Slingsby conducted explorations along the main S.E. passage, and discovered another great cavern about 150 ft. deep, which was descended. The passage continued beyond the cave and was followed as far as possible, the distance from the main cavern being about 550 yds. Other members of this party were Messrs. A. Barran, G. T. Lowe, L. Moore, R. Smith, W. Ramsden, F. Holtzmann, C. Scriven, and B. Mason, several of whom descended to the main cavern while the explorers were at work in the passages.

The descents were made from the end of a small cave a few yards N. of the main hole (referred to in the 'Memoir of the Geological Survey of Ingleborough,' p. 37). M. Martel's descent and all previously recorded attempts were made down the main hole.

A GOLDEN WEDDING IN THE ALPS.—Our readers know well that Christian Almer, of Grindelwald, has made a great number of 'new expeditions' in the Alps, but probably none of them was so original, and yet so appropriate, as that planned and carried out by him on the occasion of his golden wedding—an ascent of the Wetterhorn by himself (aged 70) and his wife (aged 72). Even more remarkable is the fact that Frau Almer had never before

climbed a great snow mountain. The energetic old couple were accompanied by their eldest daughter and two of their younger sons, Hans and Peter, as well as by Dr. Huber, one of the medical men of Grindelwald. The party also included a photographer and his two porters. Starting from Grindelwald on Saturday, June 20, they spent the night at the Gleckstein Club hut, as well as the whole of the Sunday. Soon after midnight on the 22nd the actual ascent was begun, and so pluckily did Frau Almer climb on this her first *grande course* that at 6.20 A.M. the whole party attained the summit. Unfortunately wind and great cold prevented a long stay there, but the golden wedding party was well seen by their friends below, and was successfully photographed on the highest snowy crest by the artist who had accompanied them. The descent was safely effected and Grindelwald regained the same evening, other photographs of the party having been taken in the Club hut.

It will be remembered that Almer was a member of the first party which, in 1854, made the first ascent of the Wetterhorn from the Grindelwald side. He was then a young married man, but even he could scarcely have anticipated that forty-two years were to elapse before his better half stood with him on that summit. While offering our heartiest congratulations to both him and his wife, it is impossible to refrain from a special expression of admiration for the energy of Frau Almer, who by this expedition showed that she had lost none of the trust she had placed fifty years ago in the faithful husband whom she then took 'for better, for worse.'

AN EXPEDITION TO THE HIMALAYAS.—We understand that Dr. M. Günther, of Berlin, is going to the Sikhim Himalayas next year. The aims of the expedition will be much the same as those of Sir Martin Conway in the Karakorams. Dr. Günther would, we believe, be glad to hear from any English mountaineers who would like to join him.

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A set of the 'Journal' in covers, as originally issued, is being formed at the Club, and the Honorary Librarian would be very grateful to any members who would assist in its formation either by presenting the parts required or letting him know where they are for sale. The parts still lacking are 1, 2, 6, 17-21, 24, 28, 31-37, 48, 58, 59, 63-68, 78-81, 83, 84, 94, 98-101.

REVIEWS AND NOTICES.

Le Massif de la Bernina. Par August Lorria et E. A. Martel.
(Zurich: Ast. Institut Orell, Füssli. 1894.)

THIS excellent work, in the production of which the authors have had the assistance of the Rev. W. A. B. Coolidge and J. Caviezol, is designed, as the preface informs us, to be, if successful, the first of a series on the High Alps, from Nice to Vienna. It is illustrated by fifty héliogravures apart from the text and 150 engravings from photographs dispersed through the text.

The authors appeal to the Alpine public as to whether this work shall remain as the description of a single group, or whether, by its being freely subscribed for, they may be enabled to carry out their full scheme. The object of the present work, as well as of those which may follow, is to gather together the results of more than thirty years' exploration in the Alps by the members of the numerous Alpine clubs, with an abridged account of all the most

interesting episodes, together with chapters devoted to topography, geology, zoology, botany, &c., and especially to illustrate freely, truly and durably. It is intended, therefore, that the work should be not a mere record of first ascents, but should show the present state of our knowledge of the Alps—thanks to Alpine explorers. It will, therefore, include accounts, given sometimes in full, at others by *résumés*, not only of first ascents, but of new routes, and of original expeditions (winter ascents, ascents by night, ascents without guides), accidents, &c.

The authors realise how difficult it must be to fully carry out such a programme as this, without missing a single expedition in searching through such a vast mass of literature. That they have succeeded as well as they have in the present volume shows great patience and care, though in spite of this there are still a few omissions, as well as several mistakes in names, &c.

If we might be allowed to make a suggestion for a future volume, we think it would be well to communicate with the author of the account of each expedition, where this is practicable, so as to ensure correctness in detail. The illustrations with which this work abounds are to form a standard of the present condition of glaciers, mountains, &c., by which changes may be detected in the future. And in order that they may be permanent the process of *héliogravure* has been employed, resulting in pictures which are practically indestructible. These pictures, which are of great beauty, are taken from photographs by various well-known Alpine photographers, and are exceedingly well chosen, so that collectively they present to the reader all the most lovely and grandest views of this fine range.

The book itself is full of interest, and the method, followed as often as practicable, of giving the account of expeditions in the author's own words imparts a vividness and reality which greatly add to this. If regarded simply as a scientific collection of facts relating to this region, the book would be of the highest value. But it is not only interesting from this point of view, but even more so to the general Alpine public, and especially to those who know the district intimately. The pictures are a very great feature in the book, some of them being taken at a great height, and others showing the mountains as seen from the lower part of the glaciers or from the valley, whilst there are several very beautiful views of the valleys themselves. Others show the appearance of the different villages in summer and winter, and there are very interesting portraits of climbers and guides.

Altogether this work is a magnificent one, and in congratulating the authors we sincerely hope that, in spite of the somewhat high price, necessitated by such elaborate illustration, and of the fact that the book is written in French, it may meet with such liberal support in this country as may encourage them to bring out the other volumes, and thus complete one of the finest works ever produced on any mountain range.

Climbs in the New Zealand Alps, being an Account of Travel and Discovery.
By E. A. FitzGerald, F.R.G.S. (London: T. Fisher Unwin.)

Mr. FitzGerald is, I think, to be congratulated on his book, as well as on his climbs. His descriptions are graphic, and the general impression left on the mind, after reading his story, is highly characteristic of New Zealand travel. The extreme fickleness of the weather in the Southern Alps; the violent and sudden storms which these ice-clad peaks, placed as they are in the midst of a huge area of ocean atmosphere, bring into existence; the difficulties of transport, the shakiness of those waggons which, after having served their day and generation in more civilised regions, are sent up to end their days in the mountains—anything being good enough to get lost in a glacier stream—all carry my mind back to many an anxious hour of fourteen years ago. While these things have not varied much, great advances have taken place in other matters; the 'Hermitage' has been built, the roads and bridle-paths extended, the Ball Hut erected at what was our fifth camp, so that Mr. FitzGerald speaks of sending a pack-horse up to it in four hours, a journey which took us four days of weary 'swagging,' the journey being extended to a week by bad weather, which stopped all progress.

Mr. FitzGerald's tour was well conceived, including, as it did, the scaling of several first-class virgin peaks, and a long and most difficult journey through the west coast valleys, with their almost impenetrable vegetation and foaming torrents, and then returning over high Alpine passes, involving great hardship and severely testing the endurance of all the party. His picture of the Central Southern Alps is thus rendered complete, for he saw it from all points. Some of Mr. FitzGerald's difficulties arose, no doubt, from his disregard of the necessity of taking a sufficient supply of food. To start, for instance, on a journey across the ranges into trackless valleys, whose dense vegetation had often been described, with no more than 'half a day's provisions,' appears to have been rather a reckless proceeding. Of the many New Zealanders whom the author came across, and who seem to have taken a kindly interest in his proceedings, young Clark deserves special mention. He acted as porter, and was, after Zurbriggen, Mr. FitzGerald's chief helper. It is evident that he is a plucky, good-humoured, athletic, and self-confident young colonial.

It would be easy to quote passages which touch on the peculiar charms of New Zealand mountaineering. One or two must suffice. The author has gained the virgin summit of Mt. Sefton, and looks down on the wondrous panorama at his feet. 'It was now nearly 11, and the sky was blue and cloudless. The South Pacific Ocean lay calm and sparkling in the sunlight, with its long, white, intermittent streaks of surf beating upon the smooth beach of the west coast. Around and behind us the Alps arose, range behind range, their vast glaciers and fields of everlasting snow shining bright in the clear morning air.' This entrancing view was the

reward of a desperate struggle with difficulties, of repeated failure, and after one serious slip which very nearly brought the author's climbs to an untimely end. Again, the New Zealand ice world of the west coast is presented to us thus:—

'The rocky precipices here descended to the very edge of the Fox Glacier, and were covered with a mass of fern, shrub, and semi-tropical creepers, forming a brilliant wall of intense green down to the very lip of the dazzling white ice.

'The mists had by this time lifted, and the sun was already making its appearance and investing this strange and new spectacle with all its splendour.'

The scenes passed through on the day following were still more imposing. Having threaded their way over glaciers and rock ridges, they at last gained a ridge overlooking the great Franz Joseph Glacier, which, with its tributary glaciers, forms an expanse of ice—'one which, I imagine, can scarcely be equalled except in the Himalayas, or, perhaps, in the Polar regions.'

When Mr. FitzGerald's climbs were finished, Zurbriggen returned to fetch down the tent, &c., with Adamson, of the Hermitage.

It had been left at our old bivouac on the Hochstetter ridge. The weather being fine when they were at the bivouac, Zurbriggen and Adamson started for an ascent of Mt. Cook. Adamson stopped about 2,000 feet below the summit, while Zurbriggen finished the ascent alone, reaching the top in fourteen hours from the bivouac. He says in his account, which Mr. FitzGerald has translated: 'From 10.40 till 1.50 we pursued Green's route—namely, along the arête.' Here he is quite in error, as Mr. FitzGerald suggests, and his remarks about the bergschrund go with this. His route did not coincide with ours until close to the summit. The two routes are very easily seen in the author's beautiful photograph of Mt. Cook, which faces p. 142.

Zurbriggen followed the arête which rises from the bottom of the left-hand side of the picture; whereas we followed the Linda Glacier (to the right of the picture) to its very head, and thence, by rocks and ice, climbed to the arête by which Zurbriggen ascended, and the crest of which we followed for about half an hour, *i.e.* until 6.20 in the evening. Zurbriggen's route is, I feel sure, the best and safest, but we had not the advantage, which he had, of inspecting it from the summit of Mount Tasman; and, therefore, did not trust it, although we fully discussed its merits.

The illustrations form such an important feature in Mr. FitzGerald's book that they call for special attention—some of the photographs suggest the difference between the glacier world of New Zealand and that of Switzerland. The piling up of heavy masses of ice on the slopes of Haidinger (as shown in the plate facing p. 168) is indicative of the heavy precipitation which takes place in the Southern Alps.

His photographs have been well selected, and are splendidly reproduced. His assistant artists have been in sufficient sympathy

with his story to portray some of the incidents he has described with spirit, but, except in the case of the landscape views, it is hard to think that they have done their best. Talking of spirits, I do not think that the frontispiece has been happily selected; it is far too suggestive of a 'full-dress rehearsal' on the Brocken: whereas the picture of the crevasse, by the same artist (facing p. 170), is much better.

The map is a model of clearness, and the whole 'get up' of the book reflects great credit on the publishers; without, however, desiring to be over critical, we cannot but think that in presence of Cook and Tasman, whose memories are constantly being brought to our minds, 'Discovery' on the title page of a mountaineering book is too big a word.

W. S. GREEN.

The Exploration of the Caucasus. By Douglas W. Freshfield. Illustrated by Vittorio Sella. (London and New York: Edwin Arnold. 1896.)

The first thing to strike us in taking up 'The Exploration of the Caucasus' is the great contrast between it and Mr. Freshfield's previous book on the same mountains, and the circumstances of their ushering into the world. When the latter appeared it was as though

Far off a solitary trumpet blew,

and it was six years before an echo was heard in Mr. Craufurd Grove's 'Frosty Caucasus.' But now through the pages of the magnificent work before us we know not how many trumpets sound

A peal of warlike glee!

We heartily congratulate Mr. Freshfield, Signor Sella, and all who have contributed to these noble volumes—appropriately dedicated to the memory of W. F. Donkin. We shall not attempt to criticise them. Appreciation, not criticism, seems to us to be the natural attitude of all mountain-lovers towards the treasures here offered them. Comparisons are not called for, but we think every reader of them will allow these volumes a very high place of honour, not only for the beauty and variety of the pictures, the excellence of the maps, the graphic accounts of ascents and adventures, but also for the solid and well-arranged information contained in Appendix B—to mountaineers one of the most interesting portions of the work.

Perhaps no better idea can be given of the growth of knowledge with regard to the Caucasus than that supplied by the two following quotations from Mr. Freshfield's pages:—

The 1860 edition of Keith Johnston's 'Dictionary of Geography' contained these very remarkable assertions, the first of which was repeated in 1877:—

'The mountains of the Caucasus are either flat or cup-shaped; the existence of glaciers is uncertain.'*

* I. p. 9.

Contrast with the above—

The really mountainous part of the chain, from Fish Dagh on the west to Basardjusi on the east, is over 400 miles long—a distance about equal to that between Monte Viso and the Semmering in the Alps.

Its skirts stretch out for another 150 and 100 miles respectively to the neighbourhoods of Baku, on the Caspian, and of Novorossisk, the new Black Sea corn-port of Ciscaucasia. It runs from W.N.W. to E.S.E., between latitudes 45° and 40° N., its centre being in the same parallel with the Pyrenees. The snowy range—'the frosty Caucasus'—which begins north of Pitzunda on the Black Sea, stretches without interruption to the eastern source of the Rion, the ancient Phasis.

Between the Klukhor and Nakhar Passes and the Mamison Pass—that is, for 100 miles, a distance as great as from the Col de la Seigne to the St. Gotthard—there is no gap under 10,000 ft.; no pass that does not traverse glaciers. Continuous no longer, but broken by gorges, one of which is the famous Darial, the snowy central crest stretches eastward, culminating in the glacier groups of Kasbek (16,546 ft.) and Tebulos (14,781 ft.). East of the historical pass of the Caucasus—commonly known as the Darial, but more correctly as the Krestovaya Gora, or Mountain of the Cross—the mountain ridges diverge, enclosing between them the barren limestone plateaux and yawning ravines of Daghestan—'the Highlands,' as the name implies.

The valleys round Tebulos have been described by Dr. Radde in his work on the Chevsurs. Its glaciers, as well as those of Bogos, have been recently explored, climbed, and photographed by a German mountaineer, Herr Merzbacher. Judging from his views, the forms of the peaks are less bold, and the scenery as a whole is less varied, than in the Central Caucasus. The range that forms the southern boundary of Daghestan, and shelters the rich forests and orchards of Kakhétia, is tame in outline though high in general elevation, and only becomes picturesque and interesting in the neighbourhood of the broad basaltic cliffs of Basardjusi (14,635 ft.), a mountain which has lately been climbed and described by Mr. Yeld and Mr. Baker.*

The evolution of the book is interesting. We believe it was first talked of as a sort of Caucasian Peaks, Passes, and Glaciers. When that proposal fell through, Mr. Freshfield took in hand a Caucasian Climbers' Guide, but finally reverted to the first scheme in a modified form. He has summarised for us the work of mountaineers in the Caucasus for the past eighteen years, and has yet given us in Appendix B what is, practically, the foundation of a climbers' guide.

The Alps were first explored by travellers, the Caucasus by mountaineers; hence the work before us is something between Brockedon's 'Passes of the Alps' and 'Peaks, Passes, and Glaciers.' Mr. Freshfield has combined the geographer's and the climber's standpoint. He has treated the chain above and below the snow-level as a whole, and he has not stopped short on either side of that line. We have here, in fact, a record of travel as well as of mountain adventure.

The distinctive mark of the book, its first purpose, is to describe not the author's or any one else's feats, but the mountains them-

* I. pp. 27-8.

selves. In these pages nature does not serve as a background to figures in an heroic or quasi-heroic attitude, the travellers are themselves figures in a landscape. The scheme of the work is the logical outcome of this intention. Mr. Freshfield, after giving in the first chapters an outline of Caucasian exploration and its results, abandons chronological sequence and arranges his matter in topographical order. In this way, if he sacrifices something, he secures his object of impressing on the reader as he goes on the distinctive features of the various groups and districts and their inhabitants, and particularly in bringing into prominence the strange story of the Lost Valley of the Caucasus, Suanetia. If the whole book 'takes a good deal of reading,' as the phrase goes, each chapter is more or less complete in itself and can be studied separately.

To summarise the contents in any detail would take too long. A prominent place is given to the story of the search undertaken in 1889 for traces of the fate which overtook Mr. Donkin, Mr. Fox, and their guides in the preceding year. The mountaineer will find full descriptions of the ascents of the most prominent peaks. Mr. Freshfield describes his own adventures on Elbruz, Kasbek, Tetnuld, Ukiu, the Laila, and Shoda.

Mr. Holder narrates his ascents of Dykhtau (whose change of name we greatly regret, while agreeing with Mr. Freshfield that in this case the decision of the Russian surveyors must be accepted) and Katuintau. Mr. Cockin tells the tale of Shkara, Janga, and Ushba. Mr. Woolley contributes his conquest of Koshtantau. We are glad to see passes once more resume their old importance. Mr. Freshfield describes no less than six 'grands cols' over the great chain, and two splendid passages of its spurs. By advice—and even by taunts—he essays to urge his successors to develop the 'High-Level Routes of the Caucasus,' and not to confine themselves to peak-hunting. In what may be called the lower branch of travel we have M. de Déchy's chapter on the Kuban sources (illustrated by an excellent special map) and the author's account of the valleys of the southern slope from the Mamison Pass to Sukhum Kale, the tangled forests of the Skenes Skali, and the pathless and lonely wilderness of the Kodor.

Let us take, as a specimen of Mr. Freshfield's style, his description of the view from Ukiu :—

I lingered long over the view; the sunlit snows were so beautiful, the mountain forms so sublime, that it was hard to leave them. Far beneath the rivers sprang from their icy cradles, flashed in the depths of the forest-fringed ravines, or shone, thin lines of silver, as they wandered out beyond the green foot-hills into the luminous distances of the northern steppe. Close at hand, and far as the eye could reach, the great peaks of the Caucasus rose like 'whiter islands' out of the untraversed sea of air.*

* II. p. 19.

We may also quote specimens of the author's power of briefly summing up the characteristics of a peak or panorama :—

Kasbek is a solitary classical mountain, not a Gothic pinnacled ridge.*
Or, of the valley of the Kodor—

It was not so much any individual peak that fixed the eye as the glory of the whole landscape—the rolling leagues of forest, the broad hills bright in the early sunbeams, the flashes of light in the depths: here a cliff, there a sinuous reach of river, nowhere any sign of human habitation.†

Nor is there wanting a lighter touch, as in the description of the traveller's relations with the folk of Bezingi or with the Suanetians,‡ who have 'carried out Church disestablishment and disendowment with curious thoroughness,' have 'realised the new ideal of a society where the freewill of the individual overrides all other considerations, and the only check to crime is the reciprocal extinction of criminals,' and yet, inasmuch as they keep three Sabbaths in the week, are, according to Carlyle's test, 'even more virtuous than the Scotch.'

Of the flowers, who can read without enthusiasm? Hear Mr. Freshfield himself:—

The slopes above the great Leksur Glacier, from 9,000 to 10,000 ft., were green in July, and the grass was enlivened with poppies, *Anemone narcissiflora*, gentians, ranunculus, campanulas, myosotis, veronicas, geraniums, framed by the darker foliage and great cream-coloured blossoms of the *Rhododendron Caucasicum*.§

Tall, yellow lilies were common; of wild roses I noticed several varieties; a white rose delicately flushed with pink was the commonest.||

But the beauty of the foreground is beyond all possible anticipation. Level lawns of smooth, lately mown turf are surrounded or broken by thickets of laurels, rhododendrons, and azaleas. Yellow lilies, lupines, and mallows flower amongst them; bluebells and campanulas carpet the ground.¶

Hear, again, M. Levier.

It was a garden (some 3,000 ft. above Cholur), but a garden of the gods. In a vast clearing, an amphitheatre, of which the walls were rocks and pines, myriads of monkshoods, surpassing the height of a man on horseback, displayed their blue and white flowers. Raised one above the other, and artistically grouped as if by the hand of a skilful landscape gardener, they adorned a long hillside. A crowd of other plants of the most diverse kinds disputed the soil with them, pushing between the straight stalks of their rivals, and prolonging their own blossoms as far as possible towards the light. It seemed a struggle as to which should climb above the heads of its neighbours and exhibit the most brilliant colours. The firework of flowers recalled the artificial bouquets of coloured stars thrown up against the sky at some city festival.** A

* I. p. 87. † II. p. 202. ‡ I. p. 218. § I. p. 43. || I. p. 44.

¶ I. p. 240.

** We have heard a countryman remark of a laburnum in full flower, 'Talk about fireworks; there's a finer firework than any they can show in the gala field!'

dense mass of verdure, composed principally of the great leaves of a groundsel and of the Alpine sorrel, covered another part of the glade, penetrating under the pines, and completely hiding the path. The enormous panicles of an ashy-blue campanula rose out of this confusion, and loftier still, the rival of the monkshoods, a scabious balanced its great yellow flowers some six to eight feet above the ground. A little further there was a display of white umbelliferous blossoms, fine grasses, potentillas with blue-green leaves. In the places where the flowers reached only to our knees we picked handfuls of azure columbines with white centres, ranunculus of several species, an *Astrantia* with pink stars delicately veined in emerald green.*

And as to the fruits of the Caucasus, we think most travellers will modify their regret that 'Wine is unknown in the northern valleys, and an exceptional luxury in the southern,'† when they read—

Strawberries, raspberries, and currants abound on the south side, particularly in the glen of the Skenis Skali. Plums and pears almost drop into the mouth of the traveller as he rides down the valley of the Kodor.‡

Of the Caucasian forests, which have already gained themselves name and fame, whether they are tangled like those of the Kodor or the Laila, or interspersed with glades like those of Suanetia, where individual trees attain to superb proportions, we have not room to speak. We remember reading with great interest Mr. Phillipps-Wolley's account, mainly from a sportsman's point of view, of the birds and beasts of the Caucasus. Mr. Freshfield does not forget them.

Both Signor Sella and M. Jukoff found the upper region of the glacier strewn with the bodies of birds of passage, which had perished in the attempt to cross the chain. In July the travellers came upon the skeletons of ducks, larks, and quails, besides many that were not recognisable; in September, Signor Sella met with quails, alive, but too feeble to escape from the fatal prison in which they found themselves. These observations establish the fact that the migratory birds do not, as had been supposed, make the circuit of the range, but boldly, and even blindly, face the snowy barrier at its loftiest point.

Notices of the *tur* or bouquetin are few, those of bears are more frequent. The maize-loving beasts can only be restrained from their favourite food by a whole arsenal of terrors—chants, drums, and torches.

On scientific matters English mountaineers in the Caucasus have for years been exposed to the gibes of the foreign specialist. Mr. Freshfield carries the war into the enemy's camp. He defines the scientist as 'a person who bears the same relation to a man of science that a poetaster does to a poet,' and he then proceeds to lay on 'correction' with the zest of the schoolboys on a famous occasion at Dotheboys Hall. 'Pretenders who misuse the name of science' are reminded that 'a statement which is neither accurate

* I. p. 45 foll.

† I. p. 67.

‡ I. p. 44.

§ I. p. 101.

nor intelligible cannot be made scientific by any initials attached to the name of its author.' But the best vindication of the Alpine Club is the fact that the complete and accurate description of the physical features of the Caucasus and the physical maps which specialists have failed to produce here lie before us. Mr. Freshfield not only gives facts and figures, he often suggests the inferences to be drawn from them. For instance, after observing that remarkable feature in Caucasian scenery the lack of lakes and waterfalls, he adds the following noteworthy and, we think, original remarks:—

I disbelieve, for reasons I have set out fully elsewhere, in the excavation by moving ice of rock basins. But that glaciers keep them scoured and leave them empty is obvious, I suppose, to every mountain traveller who uses his eyes. I cannot doubt that glaciers preserve basins formed by other agencies, and that when the protection of ice is removed such basins are slowly drained (by the erosive action of torrents) or obliterated. The absence of water-filled hollows in the Caucasus . . . may prove that the period during which the glaciers have not greatly exceeded their present dimensions has been a longer one in the Caucasus than in the Alps.*

As to geology, Professor Bonney, in Appendix A, gives a very interesting and, as far as the information at present attainable will allow, an exhaustive account of the 'Physical History of the Caucasus,' to which specialists will turn. It is accompanied by a geological map, based on the recent geological maps of the Russian Empire, and corrected in certain details by the author's and Signor Sella's observations.

In his account of the various races met with in the central mountains—Ossetes, Turks, Imeretians, Suanetians, Abkhasians, Mountain Jews—Mr. Freshfield has been successful in hitting off their characteristics, while the photographs reproduce for us their dress and general appearance. Folk-lore and kindred subjects are treated of as far as is possible in a volume not devoted to such subjects, and references are given to the special works recently published. Some very curious facts are given as to the ancient churches of Suanetia, disused for centuries, and the treasures and curiosities concealed within them.

Whatever the ultimate verdict may be on the question raised by Mr. Freshfield in his Preface as to the comparative merits of photographs and artists' drawings as material for book illustration, there can be no doubt that his own purpose has been fulfilled by the photographs supplied him by Signor Sella, Mr. Woolley, and M. de Déchy. The seventy-six beautiful photogravures and 140 plates in the text serve to illustrate the letterpress and fill in the author's description with an accumulation of topographical and characteristic detail such as only the skilled photographer can obtain. Here is one example: Mr. Cockin as he climbs the ridge of Shkara notes, 'Across the Dykhsu Glacier Ailama looked most imposing, its slopes within our view hung with tier upon tier of glacier,

* I. p. 53.

like the north side of the Lyskamm, but in heavier masses.' The description is terse and graphic; but how much is it emphasised and added to by the noble view supplied by Mr. Woolley on the opposite page! The glades of Brobdingnagian blossoms, the gloom of the pine forests, the grace of the birches that fringe the high pastures and frame the snowy peaks, the peaks themselves with their hanging glaciers and avalanche-fluted slopes—in two words, the flowery and the frosty Caucasus—are in succession brought under the reader's eyes.

The three large panoramas, the first of the size, we believe, executed in photogravure, are successful and extraordinarily instructive. A tour might be planned from them in conjunction with the map. Signor Sella here takes the mountaineer up 'exceeding high mountains,' into a region to which the grey clouds that roof the underworld serve as a silver floor, and shows him as in a vision the kingdoms that await him. Some of the initial letters to the chapters deserve a passing word of recognition; they are curiously typical of Caucasian travel and people, and very delicately reproduced.

The map—the first authentic map of the whole Central Caucasus—will be to future travellers in the Caucasus what the Alpine Club map was to travellers in the South-western Alps, and much more. How many expeditions will the enthusiastic climber be able to devise from studying it, especially when Appendix B supplies him with a Climbers' Guide in addition? We have had some experience in such work, and can appreciate the care and trouble that the Appendix must have cost. If climbers make the use of it they ought to do, Mr. Freshfield will be well rewarded for his pains. The only slip we have noted is that a foot note referring apparently to the eastern peak of Elbruz has got appended to the western.

We cannot admire too much the perseverance under difficulties and the technical skill which distinguish the Russian General surveyors; while the courtesy and generosity of General Kulberg, the head of the survey, and his able officers, MM. Jukoff and Bogdanoff, show that chivalry has not disappeared from the world. They have given Mr. Freshfield all the assistance in their power, and we are sure they will be gratified with the maps which the care and skill of Mr. Reeves and the intelligent staff of Mr. Stanford have produced from the materials so liberally supplied.

We would that we could follow Mr. Freshfield into the 'general character of travel among the mountains; the difficulties to be overcome, the hardships to be encountered, the pleasures to be won.'* He gives a full account of all this, and adds an interesting comparison between the Alps and the Caucasus, from which we take the following:—

The landscapes of the Caucasus are less picturesque but more romantic. The scenery appeals more to the imagination; even when

* I. p. 65 foll.

ugly, it is rarely commonplace. It is as Shelley's poetry to Scott's. The scale is larger, mankind is less conspicuous.*

In my judgment, then, the supremacy of Caucasian scenery lies in the heart of the chain; it consists in the forms of the peaks, their lavish glaciation, and the richness of the flowers and forests that clothe many of the upper valleys. Its inferiority, compared to Alpine scenery, will be found in the outskirts of the mountains. The strength has to be sought; the weaknesses, on the contrary, are obvious at first sight. The Caucasus has no lakes. It offers nothing to compare to the highly decorated loveliness of Como, the stately charm of Garda and Maggiore, or the pastoral romance of Lucerne and Thun. †

Mr. Freshfield gives much excellent advice to travellers intending to visit the Caucasus, from which we make the following extracts:—

To all who intend to wander among the peaks and glaciers of the Caucasus, or other partially explored mountain regions, I would offer this advice. Do not grudge time spent in reconnoitring. Carefully examine your mountains from some outstanding, and, if possible, fairly high station before you attempt any novel expedition. . . . It is also essential, in my opinion, that the guides selected to take part in distant expeditions should be men who have gained experience in parts of the Alps far from their own homes, where the mountains have been new to them. ‡

Add to this the joint exhortation of two ex-Presidents, for part of which we must make room:—

We have found at the other end of Europe a strange country, where giant peaks wait for you—remote, sublime, inaccessible to all but their most patient lovers. If you worship the mountains for their own sake, if you like to stand face to face with Nature where she mingles the fantastic and the sublime with the sylvan and the idyllic—snows, crags, and mists, flowers and forests—in perfect harmony, where she enhances the effect of her pictures by the most startling contrasts, and enlivens their foregrounds with some of the most varied and picturesque specimens of the human race—go to the Caucasus! §

Will our younger members turn a deaf ear? Will they not rather,

By bare imagination of a feast

such as this, offered them by the Frosty Caucasus, be driven at once to emulate the triumphs and to share the pleasures of their elders?

Mr. Freshfield will have it that the mountains may serve as a Workshop for the physical student, or a Cathedral for those who find Churches inadequate. But here, if we may say so, is the conclusion of the whole matter: 'The Caucasus is an admirable playground.'

Upper Teesdale, Past and Present. By James Backhouse, F.L.S., F.Z.S.
London: 1896.

This unpretentious little book can be recommended with confidence to anyone who thinks of visiting Upper Teesdale. 'The area

* I. p. 72.

† I. p. 74.

‡ II. p. 215.

§ I. p. 79.

of country covered in these chapters is extensive. . . . From the source of the Tees on Cross Fell to Middleton-in-Teesdale, as the greatest distance E. and W., and from Harthope Head to High Cup Gill Head, from N.E. to S.W., represents an area of close upon ninety square miles. . . . Not a single point upon the total area lies less than 700 ft. above sea level, and on Cross Fell an elevation of 2,890 ft. is reached.' For those who take an interest in Alpine flowers this district has a special attraction. We quote from the chapter on the Teesdale Flora. 'Roughly speaking, Upper Teesdale must rank as about the richest district in the kingdom, in proportion to its size; for whilst adjacent valleys (*i.e.* Weardale, Lunedale, Swaledale, &c.) can boast a large and varied flora, Teesdale has the additional advantage of possessing a larger number of geological formations within its limits; consequently a greater variety of soils. This advantage is also increased by a greater range of elevation. Thus, upon limestone, occurs *Gentiana verna*, upon the basalt *Potentilla fruticosa*, *Pyrola secunda*, *Arbutus Uva-ursi*; upon the sugar limestone (granular), *Alsine stricta*, *Viola arenaria*, *Helianthemum canum*; on the Fell Top limestone, *Myosotis rupicola*; in high mountain bogs—probably never less than at 2,000 ft. elevation—the scarce *Saxifraga Hirculus*, and so on. In certain places there are pastures in which *Trollius europaeus* reigns supreme; in others, again, a pink shade over several acres is caused by myriads of *Primula farinosa*; whilst, higher still, on limestone plateaux, *Gentiana verna* luxuriates in celestial beauty.' The author, who is an authority on ornithology, gives an Avi-Fauna of Upper Teesdale. We wish the little book the success it deserves.

Bergen's Fjellmannalag Aars-Oversyn. 1895.

The issue of this, the first year book of the Bergen Alpine Club, is one of many signs of the steady growth of the sport of mountaineering amongst the descendants of the vikings. Bergen already numbers several doughty wielders of the ice-axe, some of whom are also ready writers and good sketchers; hence we may reasonably expect great deeds to be enacted in the future, as well as good sporting papers by members of the club.

The principal features of the book are a laudable attempt to tabulate the principal deeds of daring achieved on the snowy Justedals Bræ from the year 1820 to the present time, a list of passes over this snowfield, both ancient and modern, an amplification of one compiled a few years ago by the present writer, a valuable glossary of technical mountaineering terms,* a few short papers and an excellent coloured panoramic view of the Jotun Fjelde from a sketch by the late Emanuel Mohn.

W. C. S.

* *Nor. Tur. For. Aarvog for 1890, p. 38.*

CORRESPONDENCE.

S. A. C. HUTS.

To the Editor of the ALPINE JOURNAL.

Neuchâtel : 18 juillet 1896.

TRÈS HONORÉ MONSIEUR,—Le Comité Central du Club Alpin Suisse a pris connaissance de la lettre de M. W. C. Compton, dans le numéro de Mai de votre estimable revue. Il a immédiatement pris des mesures pour remédier, dans la mesure du possible, aux inconvénients signalés par votre honorable correspondant, et fera tous ses efforts pour que les abords des cabanes du Club Alpin Suisse soient à l'avenir d'une parfaite propreté.

Recevez, très honoré monsieur, l'assurance de notre haute considération.

Au nom du Comité Central.

LE SECRÉTAIRE,
DR. MECKENSTOCK.

THE GERMAN-AUSTRIAN ALPINE CLUB AND THE
USE OF THE ROPE.

To the Editor of the ALPINE JOURNAL.

SIR,—There is an obvious slip in your correspondent's letter with regard to Tyrolese guides. The accident referred to, which happened more than twenty years ago, was not on the Königspitze but on Monte Cevedale. It could not have happened had the rope been properly used. I once walked up the slope on which the fall occurred, and it is nowhere steep. Indeed, on the spot the catastrophe seems hardly credible.

The issue by the D. und Oe. Alpenverein of any Circular or Rules such as your correspondent suggests is improbable; but there is no doubt that their instructions have not been universally understood by guides or tourists, that the pernicious habit of going two on a rope is of old standing in Tyrol, has been constantly practised on the Gross Glockner,* and, though condemned by some of the best German and Austrian mountaineers, has not been effectively put down in the Eastern Alps. I suspect that the origin of the story told by your correspondent's guides was a misunderstanding on their part of the instructions given at one of the *Führerkurs* which are often held in the Eastern Alps. Three years ago a Trentino guide transmitted to Mr. Clinton Dent and myself some very curious instructions as to mountaineering precautions, which he professed to have derived from a lecture at a *Kurs* at Botzen. It was only on our offering to sign our names as past and present Presidents of the Alpine Club that he became reconciled to crossing a small snowless glacier without rope or crampons.

I am, yours obediently,

DOUGLAS W. FRESHFIELD.

* See Mr. Comyns Tucker's note, *Alpine Journal*, vol. vi. p. 151.

[We are sorry that, owing to a misapprehension, arising in the transfer of the Editorship, our editorial note on Mrs. Dickinson Berry's letter was not otherwise worded. Besides Mr. Freshfield's letter, printed above, we have received communications from several of our own members. It appears that we have involuntarily done an injustice to our Austrian colleagues. We therefore take the earliest opportunity of expressing to them our regret. *Editor A. J.*]

THE ALPS OF NEW ZEALAND.

To the Editor of the ALPINE JOURNAL.

College House, Christchurch, New Zealand :
April 20, 1896.

SIR,—Mr. FitzGerald must not think that I wish in any way to *underrate* his work out here, for, honestly, such is not the case; my point is that I fear he is *overrating* the value of his expedition, from a *geographical and topographical* point of view. By so doing he causes the hard work of years by many men here to be underrated, and in justice to your members in this remote corner and to the New Zealand Alpine Club I must ask you to permit me to reply on this subject.

I wrote before in the full expectation that when Mr. FitzGerald saw the facts he would correct, or at least modify, his claims. Instead, however, of doing so he tried to substantiate them and made rather an unnecessary attack on my good faith, which I shall deal with later.

With regard to his claim to be the first man to find and cross a pass over the Southern Alps, I pointed out that numbers of passes had been found during the last thirty-five years, and he meets this by saying, 'Only one (pass) refers to the Southern Alps of New Zealand, the rest all being on other ranges,' and again, 'The coach road which joins Christchurch to the Western Coast does not in any sense cross the Southern Alps.'

In reply to these two statements I can only say that never have I heard such an astonishing idea put forward. If Mr. FitzGerald really believes what he says he is labouring under a grave mistake, which goes to the whole root of the controversy. The Southern Alps of New Zealand have always been considered to extend from Harper's Pass, at the head of the Hurunui River, down to Haast's Pass, in the far south. Mr. Green understood this.*

The Southern Alps include at least eight distinct districts, and of these Mr. FitzGerald was working in the best known. Concerning the others far less is recorded than in the Tasman district. Should it be allowed that a man may reduce the limits of a recognised chain of mountains, every one could so define those limits as to exclude all previous passes and raise a *new* pass to the rank of a *first* pass.

* See *The High Alps of New Zealand*, p. 69.

Now, sir, I wish to distinctly state that I, in common with others, have a great admiration for the ascents made here by Mr. FitzGerald and his guide, for they did in one season the same number of good peaks as we have done in four or five seasons without guides. And the New Zealand Alpine Club was the first to acknowledge the good record, and have, I trust, learnt valuable lessons in *peak-climbing* from Zurbriggen's mode of work. So do not let any one suppose that I wish to underrate Mr. FitzGerald's work.

When I say that he overrates the value of his results I mean that he claims (unintentionally, I believe) exploration and discovery in a district already explored; and I must protest against his work being admitted as *exploration*.

The Tasman, Mueller, and Hooker Glaciers have been so overrun by visitors that he cannot possibly claim any topographical discovery concerning which we are ignorant, or which one of us has not already recorded or discovered before he came out. This, therefore, reduces his claims of exploration and discovery to the route *via* FitzGerald's Pass or the return journey *via* the Fox Glacier.

With reference to the first, when I stated that he had not referred to those who had explored the district before his arrival I was not aware that he had been shown by, and discussed with a member of the Club (*a*) Brodrick's map of the Hooker valley, (*b*) Fyfe's photograph from the Footstool, taken in January 1894 (just above the pass), showing the Douglas and Copland valleys. These two facts, combined with the fact that *he took with him over the pass a map made by Douglas of the whole Copland and Douglas valleys*, which he handed to me afterwards, in my opinion do away with any claim of exploration or discovery. I grant every credit of having *first crossed* the pass, but that is only valuable as an Alpine record, but from a topographical standpoint the passage was valueless, for anyone seeing these two maps * and Fyfe's photograph could see the *details* of the whole route at a glance.

As to his having found 'for the colonists the easy and direct pass they have so much wanted' (to quote the President, p. 9), I submit he has not done so.

That the range had perpetual snow on the eastern side we knew for years, and is shown in photographs from the Ball Pass, and that condemns it as not meeting the Government requirements.

Douglas in his report, † after returning from the Douglas valley—for he *did* go some way up it—mentions this pass as being 'free of snow when I saw it first; but in ordinary seasons the usual winter fall might not melt, and this pass may be considered to be covered with perpetual snow.' But it made no difference what the western side was if the *eastern* side failed in its conditions, and those who had worked on the Canterbury side had stated for years that it failed to do so. Douglas's exploration was under the Westland Survey Department, and was really unnecessary so far as the

* See *New Zealand Survey Reports*, 1889-90 and 1892-3.

† *New Zealand Survey Report*, 1892-3, p. 45.

col was concerned. The fact is that no such pass as they require exists, and we have proved it by our work, so the Government must make the best of this pass. Had they known that no other was available this would have had to be adopted in 1892. Surely when the route has been *explored on both sides* by independent parties it is rather hard that because a third person, using their maps, *crosses* he may take the credit of exploration and discovery. He would hold an Alpine record, but no more.

As far as the return journey is concerned I submit no capital can be made out of it for exploration or discovery, though by this route there was a little more ground actually untrodden; and though Mr. FitzGerald and I were the first to cross the range by this route both sides of the pass had been previously explored. I had during the year 1894 explored the Fox and Victoria Glaciers.* I had reached and explored the head of the Francis Joseph,† and Fyfe and Graham had ascended the col on the Tasman,‡ while I also had been within 30 minutes of it on that side in 1890. It was my duty and interest, when with Mr. FitzGerald, to note new topographical discoveries, but I do not hesitate to say, as a practical explorer, that this pass added nothing to our former knowledge. This, again, is only valuable as an Alpine record.

I feel sure that had Mr. FitzGerald enquired and read about previous work in and knowledge of this district he would never have made such claims to exploration and discovery as we have seen at the A. C. and R. G. S. His notions concerning the extent of the Southern Alps alone shows great want of enquiry.

He may have found many errors in existing maps, but we also have found these and many others, and have also recorded them. It is only owing to there being no new issue that the maps continue as before. There is an immense amount of information in the Hokitika Survey Office of details large and small, as yet not transferred to the standard map; but it is there, and was recorded before 1895. A few minor details only need correction. So far as I myself am concerned I am sorry that Mr. FitzGerald should suspect my veracity concerning Mr. Brodrick's and others' ideas of a pass *via* the Copland, and I could easily convince him were he here.

As to his charge that I neglected to record certain names, I can only say that the only three names we gave I duly recorded in Hokitika. It is rather far-fetched to talk of 'right and privilege' in this instance, for I had been on the ground the previous season, and named every feature in my opinion worth naming. This route is detailed in my diary on date April 7, 1894.

I do not consider that any attempt at 'splitting straws' or argument will be an answer to these statements. I have made for six or seven years a close study of the work in the Southern Alps, and this district in particular. I know every glacier in this locality intimately, and my facts cannot be disputed. It is not a case for

* *Alpine Journal*, vol. xvii. pp. 326, 327.

† *Ibid.* vol. xvii. p. 559.

‡ *Ibid.* vol. xvii. p. 200.

dispute, because the records will speak for themselves, and I am only stating facts with no object of belittling Mr. FitzGerald's work, but merely to show that we are not so behindhand in our topographical knowledge that he can have made all the discoveries he claims. Had not the President showed in his address how erroneous an impression had been conveyed I should possibly have said no more. And, sir, I think you and Mr. FitzGerald--when he sees these plain facts--will be ready to admit that his grand climbs and first ascents in an already explored district can hardly be admitted on the *broader basis of exploration and discovery*. To send additional proof at this distance is difficult, but I shall be glad to furnish it should it be required.

I am, Sir, yours faithfully,
ARTHUR P. HARPER.

PROCEEDINGS OF THE ALPINE CLUB.

A GENERAL MEETING of the Club was held in the Hall on Tuesday evening, May 5, at 8.30 P.M., Mr. Charles Pilkington, *President*, in the chair.

Mr. R. J. MORICH was balloted for and elected a member of the Club.

The PRESIDENT regretted to have to announce that a very old member of the Club, Captain Marshall-Hall, had died suddenly on April 14. Up to the last he had taken a very active interest in the objects of the Club, having devoted himself specially to the study of glacier movements. He endeavoured to obtain information on the subject from every quarter of the globe, and a few days before his death was engaged in writing an article for the 'Alpine Journal,' which unfortunately he left unfinished.

Mr. SCHUSTER was sure that, in expressing his regret, he was only echoing the feelings of all members of the Club. Captain Marshall-Hall was one of those who considered that the duty of members was not only to climb, but to collect information as far as possible in all departments of mountain science. His example might well be followed by others, especially the younger members.

Mr. E. A. BROOME read a paper on 'The Weisshorn from the Schallijoch.'

Mr. SCHUSTER thought it was many years since a paper had been read on any of the familiar mountains visible from the Riffel, and this paper had brought back the old spirit of the Club. He considered it very creditable that Mr. Broome had found a new route up an old mountain, and one so full of climbing interest.

The PRESIDENT said that eighteen years ago he had set out for the expedition just described by Mr. Broome; but he had given it up, as his two guides thought it was not possible. He proposed a very hearty vote of thanks to Mr. Broome for his paper, which was cordially given.

The PRESIDENT then drew the attention of members to the new

electric lantern, stating that the thanks of the Club were due, in the first place, to Professor Kennedy, who had not only given extremely useful advice, but had also presented the lamp and resistance coil. The thanks of the Club were also due to Captain Abney and Mr. Woolley, who had each presented 5*l.* towards the cost of procuring a thoroughly good lens, and to Mr. Ellis Carr, who had not only designed the stage and bracket, but made a present of them to the Club. A number of views were then shown, and the lantern was pronounced to be not only a valuable acquisition but a great success.

A GENERAL MEETING of the Club was held in the Hall on Tuesday evening, June 2, at 8.30 P.M., Dr. G. H. Savage, *Vice-President*, in the chair.

Mr. G. H. MORSE read a paper entitled 'In the Chamonix District,' and a number of lantern slides illustrating the paper were exhibited.

Mr. C. E. MATHEWS thought there was a charm about Mont Blanc that would last for ever, and which neither the Caucasus nor the Himalayas could ever possess. He had himself made the ascent ten times, and considered that no expedition on the mountain could be more beautiful than the one followed by Mr. Morse, ascending by the ordinary route and descending over Mont Maudit, Mont Blanc du Tacul, and through the seracs of the Géant to the Monteners. He proposed a hearty vote of thanks to Mr. Morse for his paper.

Mr. DOUGLAS W. FRESHFIELD considered it would be interesting for some one to follow the lower portion of De Saussure's route, which, as far as he knew, had not been followed since De Saussure's time; the ascent being made by the Montagne de la Côte would avoid the risk of stones falling from the Aiguille du Midi, and possibly some trace of De Saussure's encampment might be found. Further, if the Dôme du Goûter were then ascended, all risk of avalanches on the Petit Plateau would be avoided. He had much pleasure in seconding the vote of thanks to Mr. Morse.

After a few words from the Rev. H. B. GEORGE and the VICE-PRESIDENT, Mr. MORSE replied that the danger of avalanches on the Petit Plateau was very much minimised by keeping sufficiently far to the E., and that although stones undoubtedly did fall from the slopes of the Aiguille du Midi across the path a little above Pierre à l'Echelle, by keeping a look-out they could always be avoided.

THE SUMMER DINNER was held at the Mitre Hotel, Hampton Court, on Thursday, June 4, Mr. Charles Pilkington, *President*, in the chair. Thirty-eight members and guests were present.

AN EXHIBITION OF SKETCHES, made by Mr. A. D. McCormick while on a journey in the Caucasus last year, was held in the Hall of the Club, and was open from June 11 to July 4.

Col de Chardonnet.

N. Top.

Summit.

S. Top.



Col
du
Tour
Noir.

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ALPINE CLIMATOLOGY FROM THE GLACIER DE SALEINAZ.

W. F. DONKIN, PHOTO.

THE
ALPINE JOURNAL.

NOVEMBER 1896.

(No. 184.)

IN THE CHAMONIX DISTRICT.

BY GEORGE H. MORSE.

(Read before the Alpine Club, June 2, 1896.)

To business that we love we rise betime,
And go to't with delight.

THE Immortal Bard is said to have foreshadowed most things, but surely he could not have better alluded to the mountaineering mania, even if the Matterhorn itself had been in the vicinity of the Avon, than by the words I have just quoted. We all love the business, and go to it with delight; and possibly Shakespeare himself may often have risen betimes, when starting to perform in some distant town the high art, not of climbing, but of play-acting. But I am wandering, and feel some explanation is needed for my paper to-night, and can think of no reasonable excuse. Nature abhors a vacuum; the Alpine Club must have its paper. I propose, therefore, to record a new route up an old peak; to mention in short detail a mountain not previously described in our Journal, excepting in a note; and to recall a walk with Emile Rey, taken only three days before his death. If there is nothing exciting in my narrative, it may perhaps help to fill a gap; and a plain unvarnished tale about our old friends near Chamonix may still be interesting, in spite of the many new ranges now in process of being conquered.

A great deal of interest attaches to the Aiguille d'Argentiere, for in all the old maps, previous to that of Mr. Adams-Reilly, there figured a fictitious mountain, called the Pointe des Plines, a mile and a half distant; and Adams-Reilly was the first to prove, in 1863, that the so-called Pointe des Plines



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was none other than the Aiguille d'Argentière itself. A brief description of the topography of this mountain will, I think, be useful, more especially as the watershed which divides France and Switzerland is very vaguely shown on all the maps hitherto published, with the exception of the Siegfried map.* This, however, depicts the Swiss side only, and is not drawn in sufficient detail to indicate that the Aiguille has three distinct points on its summit ridge, a fact of some importance to anyone wishing to understand the various routes which have been followed.

The central and highest of the three points consists of a snow ridge, while those at the two ends are rock. That nearest to the Col du Chardonnet, and on which the cairn is built, is N.W. of the central snow summit, the other rock point being to its S. For convenience I shall refer to them in this paper as the northern, central, and southern summits respectively, but it must be understood the points of the compass are only approximate. Starting from the Col du Tour Noir, the watershed runs almost due W. up to the S. point, when it takes a northerly direction, and just after passing the central point runs N.W. to the Col du Chardonnet. My so-called N. point is a little to the W. of the true watershed. There is a decided dip between the southern and central points, the ridge remaining nearly level between the central and northern. From both the N. and S. points ridges run in a S.W. direction to the Glacier d'Argentière, while from the central summit a great buttress runs N.E. far out into the Glacier de Saleinaz.† These, with the N.W. arête and the one by which we ascended, form the main supports to the peak.

The mountain has been climbed by several routes, the first ascent being made by Messrs. Adams-Reilly and Whymper in 1864, from the upper or southern branch of the Glacier du Chardonnet. They mounted by rocks and a snow couloir to the N.W. arête, which descends from the summit ridge to the Col du Chardonnet. Then, passing over to the Swiss face, they cut up a steep ice-slope, and emerged between the northern and central points. It is more usual now to quit the ice-slope as soon as possible, and to attack the rocks leading to the northern end of the summit ridge, and to pass along it to the actual top.

It was not till 1885 that the N.W. arête was climbed in its

* M. Albert Barbey's map has since been published.

† See plate, *A. J.* vol. i. p. 280.

entire length, M. Paul Perret following, as far as possible, the ridge from the Col du Chardonnet to the top. Prior to our visit in 1893 three other routes had been made. In 1881 M. Charlet Straton, with two companions, ascended by the S.W. arête, leading to the northern point; in 1880, the previous year, Messrs. Dècle and Hutchison descended direct from the central summit, 'by steep rocks and a steep ice-slope,' to the Glacier d'Argentière; and in 1884 M. Barbey succeeded in reaching the top from the Glacier de Saleinaz, striking the great N.E. buttress, from the S., about 100 yards below the summit.

The climb which I am about to describe differs from those just mentioned in that it was undertaken from quite a different side, and, as far as we can gather, had never been previously attempted. Starting from the Col du Tour Noir we traversed the peak, and descended by the ordinary route—that is, the one *via* the Glacier du Chardonnet.

Wicks, Wilson, and I had commenced our holiday this year (1893) in the Graians, and had come from Courmayeur over the Col du Géant to the Montenvers. On August 2, a cloudless day, we accompanied a large party to the Jardin, the finest snow view, perhaps, in all the Alps for so easy an excursion. Returning to the hotel in good time, we despatched a porter with our sacks and rope to the Chalet Lognan, and followed leisurely in his wake. At 7.30 we were sitting down to an excellent repast, such as only a mountain inn can offer and a mountain appetite enjoy.

Next morning at 3 A.M., with daylight just breaking, we filed out of the chalet, and were soon on the upper level of the Argentière Glacier. The sun was just tinging the tops of the Aiguilles Verte and Triolet, while the wonderful cirque of the glacier basin was still in shadow, the whole prospect making one feel that a fine sunrise in the Alps is worth getting up for. Proceeding up the moraine on the true right of the Améthystes Glacier, we halted near its top at 5.40 for breakfast. This glacier leads to the Col du Tour Noir, and is, as far as I can remember, exceedingly simple. When within about 20 min. of the Col we turned to our left up some easy rocks, ending in a small snow arête, which we followed to the main ridge, and at 8 A.M. were looking down on the great Saleinaz Glacier. The place where we struck the main ridge is easily recognisable, as being the nearest gap on the W. of the Col du Tour Noir, a minor peak studded with pinnacles dividing the two. The ridge, a fine rock arête with great teeth here and there, was then followed

almost due W. The first tooth gave us some trouble, but was passed on the Saleinaz side, the slope down to that glacier being of extraordinary steepness. All the charm of a good scramble up a rock ridge is to be found on this arête, sometimes on the crest itself, sometimes on a little traverse round some knob; but it is worth mentioning that, with the exception of the first tooth, it was generally easier to move on the side of the Glacier des Améthystes.

We halted again at 9.15 to refresh the inner man, having been forced at this point to pass an enormous rock pinnacle by a traverse round an awkward corner on the French side. We then found it easier to keep below the crest, and presently struck a broadish snow couloir, which lies just under the S. peak. The couloir was followed to its top, and once more we found ourselves on the arête, which now began to rise rapidly, and a small false snow col was gained at 11 A.M. Here we took to the Swiss face to pass the S. peak, and cut steps in ice of the hardest description. The hot summer, after a heavy winter snowfall, had turned the slope into genuine blue ice, and for 2 hrs. 20 min. we were cutting across the Saleinaz face, to again strike the main arête between this point and the true summit. The distance was not more than four ropes' length, and a future party may easily find the slope in better condition, and possibly much more free from ice. Probably, under the circumstances, we should have found it easier to traverse the S. peak itself, for a tempting little ice gully, which we might easily have reached from a point a little below the false col, led well up to it, and the rocks above did not look impossible; but we were on fresh ground, and were not at all sure whether, if we got to the summit, we should be able to descend the other side on to the main arête—a moot point we afterwards settled in the affirmative—at any rate, if the rocks were free from ice. Others following in our footsteps might well try this way, and if they take with them a little extra rope, in case of the descent proving awkward, they will avoid a *mauvais quart d'heure* of over 2 hrs. duration on a slope at an exceedingly steep angle, with the Glacier de Saleinaz some 3,000 ft. below as the next possible resting-place.

We had unpleasant reminders of this possibility as the ice was hacked out of the steps, for it went whizzing down the slope, apparently to eternity; and again, when nearing the arête, by the leader, who put his hand on a big rock which seemed to be part of the mountain, but which immediately began to move. Luckily he was just beyond it, and managed

to hold it in its place as he shouted to the others to hurry, being afraid lest in its descent it should catch the rope and convey us with it to the Glacier. We quickly closed up, and holding the rope well out of the way, the great stone was permitted to proceed down the mountain side, and it wasted no time in its descent.

A short dip and an easy ascent up the snow arête brought us to the real top at 2 P.M., and presently we went on to the northern rock point, making our halt by the cairn at 2.20. On starting the descent towards the Col du Chardonnet we followed the arête for a few minutes, and then turned on to the N. face, but soon found the ice here was no softer than that which had given us so much trouble in the morning, and it was not till 5.30, after endless step-cutting, that we were down on the shoulder overlooking the Col du Chardonnet. To reach the higher arm of the Chardonnet Glacier two couloirs are available, and we started by keeping to the rock ridge between them, until driven into the one on our left. The snow here was good enough to kick steps face inwards until the schrund was passed, and, hurrying over the glacier, the route from the Col du Chardonnet was soon joined. We unroped on the left moraine immediately above the Argentière Glacier, and marched into the Chalet Lognan at 8.15, just as it was getting dark. A dinner was quickly served, and we left at 9.15 for the Montenvers, the landlord kindly coming down the Argentière mule-track to make sure that we did not miss the path, which turns off some five minutes below the chalet. And a difficult path it is to follow by lantern-light, sometimes through rhododendrons, sometimes over pastures, sometimes through dark pine woods, uphill and downhill and round corners, until at last the steep descent to the Chapeau is reached. We passed that familiar landmark at 11.15 P.M., and it took us $1\frac{1}{2}$ hr. more to make the Montenvers, for we were tired and carried heavy sacks.

Two years later (1895) I was again on the Argentière Glacier, this time with C. H. Pasteur and Emile Rey, and we turned our attention to the Aiguille du Tour Noir. The description of the ascent of this peak, as given in the 'climbers' guides,' is to follow the route to the Col d'Argentière as far as the Col, and then to turn northwards, keeping near the arête until the final perpendicular rocks are reached. Thence one is told to traverse a ledge on the S.E. face, with an awkward projecting rock on it, and presently to climb up the steep rocks direct to the summit. These instructions we most carefully followed, none of us having been on the moun-

tain before ; the only difficulty we experienced being that we could not distinguish the ledge on the S.E. face, possibly owing to the fact that a great deal of snow had fallen during the previous fortnight, and it may have been covered so as to be unrecognisable. Still, we traversed the face, and certainly found a *mauvais pas*. A shelf we were crossing became smaller and smaller, gradually thinning out into nothing, and the next step was some 6 ft. or so further on, rather below us. There was no handhold, nothing but smooth rock above, and the long stride, taking off from about one bootnail, appeared rather awkward. Rey stepped over easily enough ; but it was our first walk this season, and we had not yet got our mountaineering feet. On remarking that the handhold was scanty, Rey reassured us, with a smiling face, saying, 'Oui, mais c'est très bon pour les pieds.' This no doubt was true, so we stepped over too. We turned up a secondary rib, and soon reached a very unstable snow-patch, which terminated in the gap between the two summits of the peak. A few minutes then brought us to the highest point, about 6 hrs.' walking from the Chalet Lognan.

The weather was bad, and as it was thundering and snowing, we were not tempted to remain long on the top, but from the position of the peak the view must be very fine. On leaving the summit we were loth to venture on the snow-patch, which was certainly unsafe, so tried a new route on the opposite or French side. A large rock couloir, filled with loose stones, descends from the gap, and we decided it would be far preferable to risk a falling stone than to trust ourselves to the bad snow on the other side. By keeping as much as possible to the true right we avoided the stones, though, when near the bottom of the couloir, we found it necessary to cross over, in order to strike the northern arm of the Tour Noir Glacier. Steps were necessary till past the schrund, and then, by keeping to the extreme right, we passed the icefall in a valley between the glacier and the rocks, and rejoined our morning's route near the junction of the glaciers d'Argentière and Tour Noir. It is perhaps worth recording that Mr. Schintz, with Pollinger, father and son, about a week later ascended this peak. They too failed to discover the ledge on the S.E. face, which I am told is usually very noticeable, so they turned on to the Glacier d'Argentière side, and, cutting down a snow gully, crossed into the bottom of the rock couloir by which we had descended, thus making what is probably the first ascent from that side. There is no real difficulty in the climb, and the traveller who has never

crossed the Col d'Argentière gains additional interest by traversing one-half of that fine pass, and seeing also the other half from the Col itself; while the view of Mont Dolent, as we saw it from the Col, white with snow, was a vision not easily to be forgotten.

Four days afterwards (August 15) the same trio started for the Grands Mulets, across that region of stones which lies between the Montenvers and Pierre Pointue. Having passed that way on several occasions, I should be sorry to have to decide whether it is easier to keep up over the glaciers themselves close to the Chamonix Aiguilles, to skirt the tops of the woods, or to take the middle course at the foot of the glaciers, over interminable moraines. The views of the said Aiguilles are very fine either way, and there I let the matter rest. In due time we arrived at the Grands Mulets, and were lucky enough to find only two other travellers. Next morning we reached the hut on the Bosses at 3.20, and found it stuffy beyond words, being crammed full of people. All, however, were disappointed, for though the porters who were carrying up the large telescope to the Observatory reached the top later on by way of the Corridor, no one crossed the Bosses that day on account of the furious wind, which, for some reason or other, seems peculiar to those excrescences. Some five or six parties were disappointed, and Rey, I think, most of all, for it was his fiftieth birthday, and he was keen to spend it on the summit of Mont Blanc.

On August 20, Pasteur having returned to England, Rey and I started again for the same expedition, and as the weather was magnificent and the mountain in unusually good condition, all the crevasses being firmly covered or well bridged with snow in first-class order, we decided on a step which, I fear, even this does not justify—we went without a third man. Again we were in luck's way. About twenty people had rested at the Grands Mulets on the previous night, while we had the whole cabane to our two selves. We left at 1.30 A.M., and reached the Bosses hut at 5 o'clock, finding it untenanted, wholesome, and fresh. Here I made a small meal; but Rey, who had a great respect for Mont Blanc, and on principle ate nothing, 'because of the rarefied air,' was anxious to proceed, as sundry whisks of wind were blowing the snow off the Bosses, and he was fearful lest we should again miss our opportunity. Rey's respect for the mountain showed itself in more ways than one, for he always put on two flannel shirts and two pairs of stockings, precautions which I understood him to say he rarely took for any other peak.

It is curious to note the difference of dress worn at different periods ; extremes meet, even on the summit of Mont Blanc. Colonel Beaufoy, who ascended in 1787, a few days after de Saussure, says, ' My dress was a white flannel jacket, without any shirt beneath, and white linen trousers without drawers ' * — a costume more appropriately described nowadays as a suit of pyjamas. Probably the Colonel was cold at times during his ascent, and he certainly erred according to our present ideas ; but he had no doubt heard Lombard Meunier's account of the scorching power of the sun, who affirmed, after his attempt in 1783, that, if he ever tried again, he ' should only take with him a parasol and a bottle of scent.' † Let me turn to the other extreme. Mr. Floyd, one of Albert Smith's companions in 1851, says, ' Gaiters, fur gloves, and every conceivable protection against the cold, were resorted to. And so we proceeded on our way, swollen by the reduplications of our dress to most unnatural proportions.' ‡ And Mr. J. R. Bulwer, who reached the top the following year, thus describes his costume at the Grands Mulets—and he appears to have started in it the next morning : ' My clothing consisted of three pairs of worsted stockings, thick shoes hobnailed and well greased, a pair of woollen drawers, two pairs of tweed trousers, and woollen gaiters. My trunk was enveloped in a flannel waistcoat, two shirts, a double-breasted holland waistcoat, and thin blue coat. Round my neck, in addition to a collar and silk handkerchief, I wore a shawl brought round over my chest, and a red-and-green " comfortable," a gorgeous affair, the property of the waiter at the Hôtel de Londres. On my head I had a double woollen nightcap, pulled over my ears and down to my eyebrows, and over that a broad-brimmed felt hat was tied down by a pocket-handkerchief under my chin ; my plaid was fastened over my chest and shoulders Scotch fashion ; and, lastly, my hands were snugly encased in two pairs of worsted and a pair of chamois-leather gloves covered with fur.' §

All the old ascents of Mont Blanc are interesting reading, and many are illustrated with the most grotesque engravings ; but time will not allow me to trespass further to-night.

To return ; 20 min. sufficed for our halt, and, passing the Bosses after all without difficulty, we reached the top

* *Annals of Philosophy*, February 1817.

† *Story of Mont Blanc*, Albert Smith, 1858.

‡ *Fraser's Magazine*, July 1855.

§ *Extracts from My Journal*, privately printed, 1853.

at 6.45—successful at last, for it was my fourth attempt. We spent $\frac{3}{4}$ hr. there, enjoying the view in a cloudless sky, the Observatory being the only blot in the panorama. By 8 we were on the Corridor, and here Rey, having descended from the rarefied air of the summit, condescended to break his fast. From this point we were only $\frac{3}{4}$ hr. reaching the top of Mont Maudit, although it looks so much longer; but the snow last August was in such excellent condition that we had only one short piece of ice to negotiate. The view from here of the E. face of Mont Blanc, with the Brenva Glacier immediately below, is well worth going to see. We descended the N.W. arête for some 20 min. to a sort of col, whence Rey cut down a very steep slope to the unnamed glacier which lies to the N. of Mont Maudit.

Poor Rey! it was on such places as these that he was happiest—places requiring care, and taxing his energy and skill, and where his perfect icemanship gave confidence to the whole party. In the descent of this slope I was taking ordinary precautions, paying out the rope as Rey cut the steps, and, having tightened it a little too much at one period, he looked up, and said, 'Ce n'est pas nécessaire, monsieur; moi je ne glisse jamais.' Three days later a fateful slip on some easy rocks brought his career to an untimely end, and one of the most brilliant of modern guides, one of the keenest for new expeditions, and one of the best companions on the mountain side, met his death almost in sight of his own home, and on a peak which belongs peculiarly to his own village.

We went quickly down over the first half of the glacier, and then the snow turned to ice, and it was not till 11.50 that we were near the col between Mont Maudit and Mont Blanc du Tacul. Another short halt, and at 12.50 we were shaking hands with Mons. Vallot on the top of Mont Blanc du Tacul. His party had seen us on Mont Maudit, and were astonished to hear we had traversed the Monarch himself before arriving there. Favoured by their tracks towards the Col du Midi for the first part of our descent, and by the steps, through the seracs of the Glacier du Géant, of an army of porters who had come up the day before to repair the Midi hut, we reached the Montenvers about 6 P.M., after a snow-climb of almost matchless grandeur.

Such was my last walk with Emile Rey, and it is sad to think that he will never again lead a party up the snowy Alps. I had not climbed much with him, but our friendship extended over several years, and he had by chance now and

again joined us in isolated expeditions. It is unnecessary for me to dwell upon his qualities as guide, his genial manner, his courteous care, and constant thoughtfulness; but it was ordained that his time should come, and those who called him friend will miss his face for many a year. There is a sad side sometimes to mountaineering, but we may be thankful it is a comparatively rare one; still, it is questionable if it is not a necessary adjunct to all true sport.

No game was ever yet worth a rap,
 For a rational man to play,
 Into which no accident, no mishap,
 Could possibly find its way;

and mountaineering, pursued according to known rules, is as fine a school for skill, endurance, and pluck as any other sport or pastime, and in these days of great enterprise is a fitting recreation for active and energetic men, no matter what nation they belong to.

My paper is finished, and possibly I have detailed at too great length expeditions of an ordinary character. Mont Blanc is ascended with ease by numerous parties every summer, and the aiguilles d'Argentière and Tour Noire are of comparatively small importance. Still, I think many a member of this Club, in recalling his various climbs, will agree that it was not always the highest point nor the most difficult peak which afforded him the greatest pleasure, and, in remembering many happy days in the Alps, will echo with me the old adage: 'Sometimes little fish are sweetest.'

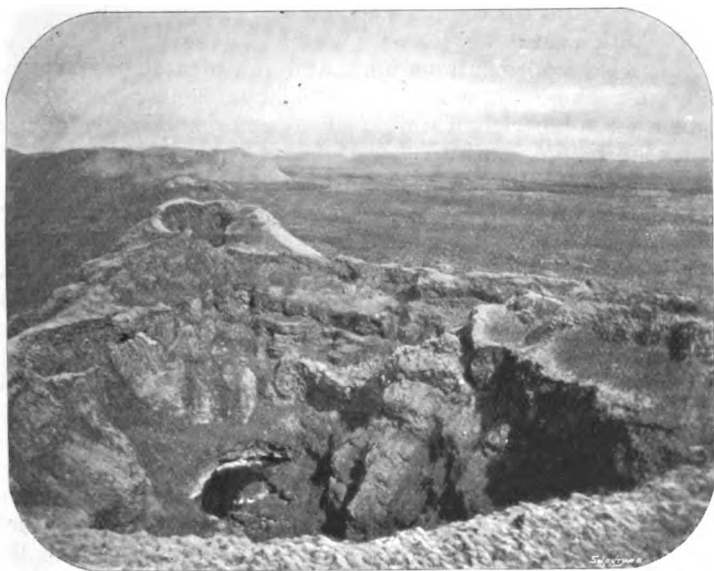
THE SKAPTÁR JÖKULL.

BY TEMPEST ANDERSON.

I HAD long been interested in volcanoes. The Skaptár Jökull was mentioned in all books on the subject as having in 1783 erupted two great lava streams, 40 or 50 miles long, and supposed to equal Mont Blanc in cubic contents. All the books agreed in stating that the eruption, and the famine and pestilence which followed, had caused the death of 9,336 human beings, 28,000 horses, 11,461 head of cattle, and 190,488 sheep—these figures being evidently copied from one another, and traceable to Henderson, a missionary who visited Iceland in 1814 and 1815, while the events were still a matter of living memory. Beyond these statements there was a general consensus of 'no information,' so dear to Alpine

aspirants, and when I came on Lord Dufferin's description, I determined at all hazards to try and reach the crater.

He states *:—'Over the area occupied by the Skaptá Jökul, amid its mountain-cradled fields of snow and icy ridges, no human foot has ever wandered, yet it is from the bosom of this desert district that has descended the most frightful visitation ever known to have desolated the island. . . . Whether the two streams issued from the same crater it is impossible to say, as the sources of both were far away within the heart of the unapproachable desert, and even the extent of the



A CRATER OF THE SKAPTÁR JÖKULL.

lava flow can only be measured from the spot where it entered the inhabited districts.'

Accordingly, on July 16, 1890, I landed at Reykjavik, accompanied by Dr. Lavis, of Naples. The well-known guide, Zoëga, had been written to on the advice of Mr. Coles, an old Icelandic traveller, and his nephew, Thorda Zoëga, met us, and provided the somewhat formidable caravan necessary for such an expedition. Icelandic custom prescribes two horses for each load, so that each horse should only run loaded

* *Letters from High Latitudes*, pp. 110 and 112.

half the day. The two travellers and guide thus required six horses; a tent, the cameras and provisions, and two small pack boxes of personal luggage, furnished three loads for six more, making twelve; and as it was obvious that twelve horses turned loose to graze at night would be liable to stray, two youths were taken to look after them, each of whom required two more, which, with a spare horse, in case of a sore back, made seventeen. I soon found, moreover, that beyond a moderate distance from Reykjavik a local guide or guides was generally required to show the others the way, each of whom provided himself with two more horses, so that my caravan often reached the respectable total of nineteen or twenty horses.

Zoëga is a conscientious man, and his idea of giving good value for the money was to ride *helterskelter* across the country, a plan which might have commended itself to a circus-rider, but not to a pedestrian by nature and habit, who is fond of stopping to examine and photograph.

Ten days of hard riding along the south coast, including the fording of innumerable rivers, brought us in view of the Skaptá lava. The valley of the Skaptá river down which it descended was formerly narrow and deep (600 ft. in places), but was filled brimfull of the lava, and the river, here called Eld Vatú (fire river), now flows on its surface.

The lava is of the scoriaceous type ('Aa' of Dana), with its surface formed of huge blocks of irregular shape, and with jagged edges. The river is very large and rapid, and in most places impossible to ford; but by taking advantage of a place where it is divided into many branches by inequalities of the lava, we were able to get across, though each branch was a considerable stream. The inhabitants of the Skaptádalr, being cut off from the rest of the world by these numerous and dangerous rivers, have retained their primeval manners and customs more than those of any place I have visited, and are, in fact, still in the Stone Age. At one farm where we slept I found in use a wheelbarrow with a stone wheel (see illustration), a stone hammer, a steelyard with a stone weight, nets with bone sinkers, a quern or stone hand-mill, harness with bone fastenings, stirrups made of horn, dice formed of the astragali of sheep, and in an adjacent one a bowl of the concave surface of a joint of basalt, which had only recently ceased to be used. They, like almost all Icelanders I have met, were honest, hospitable, and obliging. Would that we could say the same of all the fraternity who prey on travellers elsewhere.

As we got towards the head of the valley, our excitement increased. Should we be able to get to the crater or craters, and what would they be like? Should we find a single big mountain like Vesuvius or Etna, or a number of small ones? Would it or they be covered up under a glacier like the crater of Kotlugiá, which we had failed to see, and which, when it erupts, vomits out a mixture of boiling water, icebergs, volcanic ashes, mud, and lava?

The old farmer at the last farm had lived there all his life.



A FARM IN THE SKAPTÁDALUR.

He remembered more than one party of travellers going up and returning without having reached the crater,* and was confident no one had ever been there. He was, however, willing to go with us.

We went up the valley and ascended a mountain he called Sandfell, apparently 4,000 to 5,000 ft. high, much like Vesuvius in shape, with a central crater and an outer ring like Somma partly encircling it. We had a magnificent view, including

* I have since discovered that Herr Helland, a Norwegian traveller, has visited and described these craters under the name of *Lakis Kratere og lava strømme af Amund Helland*. Kristiania, 1886.

many jagged toothed peaks far out in the wilderness, which we longed to be at, but the mountain itself was evidently not the source of the lava, but much older.

Before this we came to a field of very jagged lava, which we had some difficulty in getting the horses to cross, but they are really wonderful animals, and eventually the passage was accomplished. Some of the blocks were 10 ft. or more high.

Going further on to the very edge of the desert we camped at the last patch of grass, where also we luckily had a stream of water. After a sharp frosty night we started early, leaving the camp and baggage train to wait our return. Fortunately the weather was favourable, and we enjoyed the only really fine day for many days. The country did not prove inaccessible. We traversed chiefly scoriæ and blown volcanic sand, which, though heavy going, was not difficult, and here and there exposed lava of the non-scoriaceous type, mostly smooth, or slightly corded, and this continued for probably 10 miles from our camp till we reached the craters. Here a truly marvellous spectacle presented itself; a vast fissure had opened out, many miles long, and varying from nothing at the end we saw first up to perhaps 10 ft. as its widest part. Its direction was roughly S.W. to N.E. At the lower narrow end were first a few baby craters a few feet high, then larger ones mostly breached at one side where the chief flow of lava had taken place, and where the enormous masses of lava had solidified just as they came out in billows of fire a century ago. Further on and higher up the fissure we came to larger craters, rising to the size of respectable hills, perhaps 200 or 300 ft. above the lava field. These are perfect on all sides, roundish or oval, and the great fissure can still be seen of a width of perhaps 6 to 10 ft. running along the bottom of several. Traces of it are also visible going under the great heaps of scoriæ which separate adjacent craters and form their walls at these parts. The outer slopes of the cones are gentle, the inner walls of their craters nearly precipitous; this conformation being apparently due to the scoriæ having been ejected in a pasty condition, so that they stuck where they fell; and thus while those which fell directly into the fissure were blown out again, those which fell out of the direct line attached themselves, and did not roll back to fill up the vent, as we so often see in ash cones.

These cones and craters also illustrate most strikingly the fact that water, except as running streams, has scarcely any eroding power. Though they have been erupted over 100 years, their edges are as sharp and perfect as the day they

were formed; the explanation being, that the scoriæ are so porous, that the rain as it falls, and the snow as it melts, instantly soak in, and never appear on the surface as a stream. The lava near the craters is nearly all of the corded or 'pahoehoe' type, while lower down the valley immense fields of scoriaceous lava or 'Aa' of the most bristling character are seen. The most probable explanation is, that the lava at the commencement of the eruption contained much imprisoned steam and vapour, which escaped in fiery froth, and solidified into the rough 'Aa,' and was carried down the valley on the surface of the molten lava underneath.

The eruption was a prolonged one, and consequently the later lava had a prolonged simmering in the chimney or fissure, during which it parted with most of its vapour; and when it finally flowed out it had little left, not sufficient to form a layer of froth, but only a few 'Giant's Children,' or spiracles, of which some very fine examples occur on the lava near the craters. This sequence of events does not appear always to obtain. I have seen near Hecla the higher part of a lava stream scoriaceous, the lower corded.

After going as far as we had time for, we rejoined our horses, got back to camp, and to the farm the same evening. Next day we started for the Fjallabaksvegr (Fell-back-way), which we hoped would lead us among the pointed peaks. The weather proved abominable, the desert to be crossed was 90 miles from house to house, and there was only one patch of grass for the horses about half way across. This being eaten bare in one night, we could not stop to try ascents. However, we saw many fine peaks, a genuine ice-sheet (the north edge of the Myrdals Jökull) resting on almost level loose sand (moraine profonde?), some curious hot springs, and some of the most wonderful river terraces and other effects of denudation on a large scale that it is possible to imagine—to say nothing of cloud effects. when it occasionally stopped raining and cleared a little.

As I was riding along I saw some bones which seemed larger than the sheep bones so often met with in deserts, and I asked Zoëga what they were. He said, as nearly as I can remember, 'Those are the bones of horses of four men who were lost in snow here ten years ago. You ask what time of year? In September, not much later than this. It looks like snow to-day; we had better push on.'

So we returned to comparative civilisation. It was a most interesting expedition, but I shall always regret that we had no opportunity of assaulting the pointed peaks. The illustrations are from photographs which I took on the journey.

MOUNTAINEERING IN THE CANADIAN ROCKIES.

BY S. E. S. ALLEN.

II.

NEXT morning I called W. and F. at 4.30, and in an hour we were ready to start for a trial upon Mount Temple. In ascending Sentinel Pass we kept to the left, as before, and, after cutting steps up the ice-slope, reached the bad rock-slope of which I have spoken. We were longer upon this than upon any other portion of equal length upon the whole mountain, and when we reached the top of the pass the possibility of three or four thousand feet more of such slopes was far from reassuring.

After a rest of a few moments we began a gradual ascent from the col on the E. side of the arête, and, proceeding up a wide gully set with a series of ledges, we were soon upon the sloping mountain side, among a great number of low buttresses or columns, obstructing the view while near and all looking alike at a distance. It was extremely difficult, therefore, to follow the route that I had outlined from the Minnestimma lakes. At length, however, we came upon a level with the top of the first or lower of the two cliffs or 'steps' seen in profile from the camp. Leaving now the steeper ledges by which we had turned this cliff, we ascended diagonally upward to the right along an easy slope of smooth rock partially covered by a stratum of slippery scree, reaching the foot of the hard quartzite cliffs or stratification, which forms a continuation of the second or higher of the two 'steps' above mentioned. The surmounting of this stratification was the doubtful point of the ascent, for the cliffs were steep and the ledges few, and it would be necessary to try one of the watercourses or steep gullies. After skirting the base of these cliffs for a considerable distance, and finding no gully sufficiently attractive, we finally chose one that led us to within about 20 ft. of the desired level. We left it here, and by a series of manœuvres along the ledges to the right succeeded in gaining the easy slope above.

At this point a suggestion was made by F. that we continue up the E. side of the arête, which looked about as good as the W. side had done from camp. W. was in favour of the W. side, in which view I finally concurred, and we immediately ascended a small snowfield and crossed the sharp ridge, marking the spot in order to recognise it on our returning. And now for the first time since leaving Sentinel Pass we looked down upon our camp and the Wastach Valley.

The remainder of the ascent to the summit was along the W. side of the arête up an easy slope of limestone. The cliffs to the E. steepened as we advanced, and had we adopted the suggestion of F. we would probably have been beaten. Some of the gorges upon this side were very grand as seen from the arête, the contrast of the yellow limestone cliffs and white snow in the hollows being very beautiful.

At noon we reached the summit, where we built a cairn in a con-

spicuous place against the snow. A curving cornice, rising and overhanging the N. face, shut off our view of Bow Valley and of Laggan. All the peaks of the group appeared like spectres through the haze, and only the summit itself could be photographed. There were a number of cornices on the E. side of the arête, which made fair photographs.*

The western, southern, and eastern ridges of Mount Temple meet in a summit of broken rock, corniced to the N. Our camp was visible, a dash of white by the river, 4,800 ft. below us. The Sentinel and Cathedral looked insignificant beneath us, and the Wastach and Wenckhemna Valleys † with their peaks and glaciers lay mapped out for our inspection. When we looked down upon the beautiful Wastach Valley, shining with its green meadows, its darker forests, its sapphire glaciers, its graceful peaks and silver stream, we seemed translated to some fair scene in the Italian Tyrol. The other valley was all ice and rock and snow, swept with avalanches from and guarded by the dark walls of the stately Crest, and seemed like some frowning recess of the Oberland. On a clear day the view should be indeed wonderful.

We descended to the place where we had come up upon the arête, and crossing here retraced our steps to the easy slope of scree. Missing our point of ascent up the cliffs by some mischance, we were obliged to descend by a steep gorge, near the bottom of which W. was lowered by F. to a ledge below, and F. in turn by me, I descending with their assistance in safety. The rest of the descent to Sentinel Pass was made without difficulty. We descended from the pass on the southern side to avoid the ice-slope and loose rocks. For a time we were almost directly under a 'rock-shoot' on the Sentinel, and this side should never be used in ascending. A descent, however, can be made more quickly, and the rocks are better than upon the northern side of the slope.

I paused upon the grass-slopes to admire the sunset glow upon Mount Temple, lighting its summit with crimson and silver. The ice-slopes of the Sentinel glowed like molten metal, save where the great black aiguilles, rising like watch-towers from the shining surface, cast long shadows on the ice. One could almost fancy he heard the tinkling bells of herds upon the meadows, and the peace and serenity of the Alpine evening was restful and delicious to the three tired climbers, as was the welcome supper prepared by H., who had seen us with telescope upon the summit.

I cannot leave the narrative of this climb without commenting upon the unusual—even for him—energy and precision shown by W., who, at his own request, took the lead upon the most difficult portion of the mountain, and instantaneously discerned the proper route at the most critical point. Truly superb was the work of F., who, but a few short weeks before, had been crippled by his distressing accident on

* The peak has been triangulated at 11,658 ft. Our aneroid reading approximated somewhat closely to this.

† I now consider more convenient the English names 'Paradise' and 'Desolation,' respectively applied by W. to these valleys, but to avoid confusion will retain these Indian names in the remainder of this account.

Mount Lefroy. Considering the almost equally arduous day preceding on Hazel Peak, it was only prudent for him to forego any further severe ascents. W. had scientific work demanding his attention on our return to Lake Louise, and since H. wished to do some further shooting—(a description of his route would be a thrilling narrative: the calm nonchalance with which he crossed treacherous slopes and cols was admirable)—and G. was already planning his departure, I decided upon a reconnaissance of the S. side of Mount Green.

I went up to Hector on the morning train and started up the valley at 8 A.M., following the east bank of the stream. After an hour among fallen and burnt timber I reached the Narao Lakes* in the centre of a broad valley. To my right was an irregular peak with numerous small glaciers. To my left, further on, a glacial amphitheatre, in the foreground of which stood a vast solitary column, many hundred feet high, guarding the entrance. Its fine symmetry was enhanced by the background of blue and white and the foreground of forest green.

This amphitheatre I did not explore. I then believed its sky-line to be the notch upon Mount Green, but am now quite sure that it is the western side of Mount D'Espine.

There are occasional evidences of the old trail to Overtail River. It starts off from Hector through the burnt timber boldly enough, but soon loses itself, reappearing again on the E. side of the valley above the Narao Lakes, where for some distance it is excellent. Various spring avalanches have buried it in places. It should be put in order, as it leads to one of the grandest sections of the Rockies. †

Continuing along the river bank through very rough timber, I came upon a beautiful cataract. Further up, I followed a stream flowing from the left to the gorge whence it issued. Here a furious blast of wind nearly knocked me over, and I have known this as the Gorge of the Winds. A waterfall descended from a hanging glacier above, but was scattered in spray by gusts before reaching the bottom. The peak at the head of this gorge containing the hanging glacier is Mount Huber. No ascent need be attempted from the Gorge of the Winds.

As it was getting late I returned to Hector. It was evidently impossible to do anything without making an extended expedition. ‡

* As I have known them for convenience of reference. I am not aware whether they have names or not.

† The region has been repeatedly visited by Colonel O'Hara, who, I understand, speaks most highly in its praise.

‡ These valleys have been delineated upon a small-scale sketch-map of certain portions of the 'Rocky and Selkirk Mountains,' by Messrs. Drewry and MacArthur, in *Ann. Rep. Int.* 1892, p. 71, the same containing the article (p. 75) by J. J. MacArthur, D.L.S. His description (p. 75) seems to indicate Lake Oeesa, which he has located on the sketch map. From his description the views from the more westerly divides fully equal in grandeur those nearer the Crest. 'From one station,' he says, 'I counted sixteen alpine lakes, one of which is more strikingly beautiful than any other I have ever seen. It is about $\frac{1}{2}$ mile in length, and lies between two high spurs to the E. of the pass, at an altitude of about 8,000 ft. A steep glacier comes in at the E. end, and the water, undermining the ice, causes bodies to fall off, leaving a clear blue face, and the surface of the lake is, in consequence of the falling ice, dotted with miniature icebergs.'

Accordingly, I made arrangements with Yule Carrier, an Indian of considerable education, employed by the railroad near Field, to accompany me the following Thursday. He had never been to the region I intended visiting, and was very glad to join me.

On Tuesday, the following day, G. and I ascended Goat Mountain. This peak on the E. bank of Lake Louise is second only to Hazel Peak as a scenic point. The panorama extends from Mount Temple on the E. to Mount Whyte on the W., embracing the fine glaciers of Hazel Peak, Mount Lefroy, and Mount Green. I had ascended Goat Mountain in the summer of 1893, before the trail to the Saddle was made, and the ease of this present ascent was a great contrast to the other.

After an unsuccessful plan on Thursday to get a horse across the swollen Bow River and Bath Creek to carry provisions for my Hector expedition, I took them down by train on Friday, and started with Carrier up the stream, each carrying 20 lb. packs.

Keeping high above the valley, we passed the first amphitheatre below the great column. In order to explore the next we deposited our packs upon a rock and followed the gorge to its head, where a small hanging glacier several hundred feet above barred further advance. Returning to our packs we proceeded up the valley just at tree-line, watching the unbroken walls for gullies or other possibilities of ascent. At length I recognised ahead of us the Gorge of the Winds and the subordinate ridge E. of it that I named Wiwaxy. Stopping at 4 o'clock by a pretty waterfall just before reaching the gorge, we explored the rock-slope above, easily accessible from this point. This we followed round until we looked down into the Gorge of the Winds, but returned without observing any way of ascent up the colossal walls rising to our left, and made a resting-place in a hollow of the heather slope, whence at a glance we could survey the valley beneath, with its lakes and river and peaks and glaciers beyond, while the wind in the tamarack boughs made harmony with the music of the waterfall.

Continuing up the valley next morning we were gradually forced to descend as we rounded the Wiwaxy ridge, reaching the river bed near a small lake, which I have known as Trout Lake.

Soon we came upon the western end of as beautiful a lake as I have ever seen. While showing neither glaciers nor snow upon the immediate peaks, the immense walls to the left and the cliffs and ideally pyramidal peak to the right formed a foreground of wonderful grandeur. The N.W. end on which we stood fringed the emerald water with a growth of pine. The S.E. end facing us was encircled with cliffs 500 ft. in height, from whose summit, piled high with the rocks of an old moraine, three slender waterfalls leaped into the lake. Above these, as foreground, glistened far behind the distant snow, suggesting an amphitheatre of alpine splendour. This lake, about a mile in length and slightly less in width, I have known as Lake O'Hara.

Ascending the cliffs upon our left by a gully we reached the glacial dam. The bed of the ancient glacier behind this is occupied by a

very small lake, at the base of the sharp peak of which I spoke, and which I called by the Indian equivalent, Yukness.

The stream at the head of this lake has cut a sinuous course resembling a rough letter S in a series of exquisite cascades down the hard stratification that lies behind, above which are a number of tiny lakes; surmounting another cliff, a scene of great beauty awaited us.

The grey quartzite lay in slabs before us, level as a floor and polished by ancient ice. From the grooves and cracks of this ancient pavement grew long grass, as in the streets of some deserted city. As we stepped upon its surface our hot faces were cooled by a whiff from the ice-fields, and before us, the grey pavement gently sloping to meet it, lay a placid lake, a dark blue circle of about $\frac{1}{2}$ mile in diameter. The glaciers clustered around its further end, whence floating blocks of ice dotted with white the sapphire surface, while behind and above rose the slopes of a grand amphitheatre, their ice-fields glowing like Pentelic marble in the mellow light of the afternoon sun, like a vast Dionysiac theatre, the upper tier of seats outlined against a Grecian sky.

Depositing our packs not far from the shore of the lake, we crossed the stream and gained the top of the lower glacier on the right. From this point we had a complete view of the gorge rising at right angles above the lake on the far left, and already partially seen from the end. It was of broken rock, and looked possible, providing the lower slopes of cliff and glacier could be ascended. Deciding upon the best route for the ascent, we returned to our packs, and passed a very cold night.

Awakened next morning by the loud cries of a flock of ptarmigan, we started around the rock-slopes on the left bank and connected with the ledges above. Hardly 200 ft. above the lake Carryer was attacked with mountain-sickness, and seemed unable to proceed. As he was quite comfortable when not moving, I determined to ascend without him a little distance, in order to investigate the feasibility of reaching the gorge, and reached the dry glacier above. When this began to slope upward I took to the moraine on the left, and reached the bottom of the gorge. Owing to the instability, I hesitated to proceed alone. At this juncture I saw Carryer below me, on the glacier, ascending rapidly, and completely recovered from his attack. He was ascending the rocks upon the right, having crossed the dry glacier, and seemed to be making better progress than I. To cross over at this point, however, was troublesome, owing to a sharp ice arête that divided the slope. So I kept along the margin of this, getting all the while into steeper and more unstable stuff, until I reached the base of a great cliff, whose right side was encircled by the ice arête, and whose left side was altogether impassable. To cross the arête would be loss of valuable time, so I kept up the narrow gully between the ice and cliff. Soon I was obliged to take to the ledges of the cliff. There was not far to climb. A foothold, a couple of handholds, a wriggle, a moment of doubt, and I lay poised upon a fine ledge, whence ascent to the col was less difficult. Carryer had found easier work on the right side, and was awaiting me on the summit.

We were standing on top of the 'Death-trap,' 10,000 ft.* above the sea, the col connecting Mount Green to the left and Mount Lefroy to the right, which W. and I had seen from below the Notch in 1893, and had then given its name from the frequency with which avalanches from Mount Green poured into the narrow valley leading up to it. Down into this, in curving folds, swept the slopes of ice, breaking, as the angle increased, into ice-falls and crevasses. Far below was the Green Glacier, partially seen between the walls on either side. The summit of Mount Green was not seen until we had ascended the lower slopes of Mount Lefroy, but the great ice-walls crowning its gigantic cliffs had never looked so near.

But the further ascent of Mount Green from this point was impossible, or, more properly, impracticable for two men. The cliffs rose on the left in a series of outward-sloping ledges, covered with unstable limestone *débris*, such as I had just encountered, and apparently much worse. In addition to the instability of the footholds, a slip might incur a drop upon the sloping glacier below, and a descent of nearly 3,000 ft. to the bottom of the Death-trap. Furthermore, to gain the first ledge necessitated an ascent over a pile of rock sloping off on the left to the cliffs, and on the right to the glacier.

Mount Lefroy rose from the right of the col † in steep, almost unbroken, slopes of grey glistening ice, interspersed with aiguilles and towers, and, as 1,500 ft. of step-cutting presented no particular attractions to me at that time, I made no attempt to ascend it. ‡

The view backward and downward was very fine. The gorge whence we had come looked unearthly, and Lake Oeesa (or ice, as I had named it), at 10 o'clock, still dark green in the morning shadows, seemed infinitely far below. A roar upon Mount Ringrose opposite, a cloud of yellow dust concealing half the side of that great pyramid, and a sea of rolling stones upon the glacier below announced a fall of rock down the only visible couloir upon that peak. Thus do the giant Rockies of the watershed sweep with artillery their avenues of approach. Mount Hungabee seen in profile also presented a very grand

* The party led by Mr. P. S. Abbott during the past summer obtained, I believe, an aneroid reading of 9,800 ft. for this col. It is doubtless more correct than mine, which was, like a very large number of my heights and distances, only an estimated one.

† A proposition has been made, in which I heartily concur, to name this pass in memory of Mr. Philip S. Abbott, who, in the past summer, in an ascent straight up from the col, lost his life through an accident when the summit of Mount Lefroy was almost within his grasp. That it was a pass and not merely a col he demonstrated by reaching it from the Lake Louise side. I believe his sad death is the first fatality in the 'mountaineering' records of the Rocky mountains of Canada. Mr. Abbott's death is a great loss to mountaineering, for apart from his record on the Alps, he had already conquered Mounts Hector, Stephen, and others.

‡ While there is a possibility of a traverse around the W. slopes from the col to the snow plateau above the W. buttress (which would be best made early in the season, as at this time this W. face was almost an unbroken sheet of grey ice), yet the couloir from the Green Glacier on the Lake Louise side has always seemed more attractive to me.

appearance. While I was taking photographs and bearings Carryer was building a cairn.

After lunching by a little glacial pool, whose rills ran on either side to the Atlantic and the Pacific, we descended the gorge by the side up which Carryer had come, reaching our 'camp' at 4 o'clock.

Returning to Lake Yukness we camped for the night, and next morning ascended the Wiwaxy Pass, in order to further study the cliffs of Mounts Huber and Green. After a hard pull up the watercourse above Lake Yukness we finally gained the top, 8,500 ft. above the sea, and beheld the most consummate view, from an artistic standpoint, that I have seen in the Rockies.*

From N. to N.E. the walls of Mount Huber shut off all view, but the valley of Lake Oeesa to the E.N.E. was a delight to the eye. The whole course of the winding stream flowing from the blue lake in the icy amphitheatre was mapped out as on a chart, together with its chain of tiny lakes, as far as the superb Lake O'Hara. The eye swept from Glacier Dome (as I called that portion of the Lefroy wall above Lake Oeesa) over the series of wonderful pyramids, past Mounts Ringrose, Hungabee, and Yukness, nearer, to the S. Then further to the right, in the distance, Mount Biddle towered like a giant, and a portion of the Opabin Pass and the greater part of that valley upon the N.W. side were visible. Then other distant peaks with Mount Odaray (cone mountain) bearing numerous small glaciers, in the foreground, and the other peaks previously seen from Opabin Pass; while below, beautiful as ever, the emerald Lake O'Hara, the cataracts at its head seeming but slender threads of white. Smaller lakes clustered around the cliffs beyond its southern shore, and from the top of these cliffs ran the level of the broad Opabin Valley, at about the altitude of the valley of Lake Oeesa. Mount Wiwaxy hid the mountains to the W., and turning round we saw to the N.W. the peaks beyond Hector and the Narao Lakes. The gorge below, with hanging glacier above, was part of the Gorge of the Winds. Picture the colours of morning darting from pyramid to pyramid, then slowly creeping down into the valleys, as sunlight puts a crown upon the summits, while still wrapt in the purple gloom sleep the circling glaciers, the winding stream, and the emerald water of Lake Oeesa. Here was a harmonised chaos, a stable union of warring elements—the portrayal under forms of the most entrancing symmetry of that majesty which terrifies and that vastness which overwhelms—of the spatially sublime.

The air was clear and the sun warm, and I remained 2 hrs. upon this superb point. These wide valleys and enormous walls give to the peaks an individuality and symmetry impossible in more chaotic masses like the Selkirks, though unrelieved to so great an extent by the contrast and softening lines of snow-field and névé. Each of these tall, precipitous, ideally sharp forms was a rest and pleasure to the eye, and revealed an almost personal grace.

As no way of ascent in the walls of Mounts Green and Huber

* This I wrote before visiting the Assiniboine group.

appeared, we returned to our 'camp' in time for lunch. A subsequent examination of the cliffs from the glacial dam at Lake Yukness showed a gorge about 400 ft. above us, probably containing a glacier with a visible moraine perched high upon a ledge. This moraine, practically inaccessible from this place, I knew could be reached from Lake Oeesa, and connected with a long slope of reddish limestone to the right, which extended upward some 800 ft. further to the base of a large rock, remotely resembling a crouching lion seen in profile. A water-course had made a small gully from the top of the wall above, which passed quite near the lion's nose. To climb the lion's back and gain the gully beyond his nose was an undertaking the success of which depended on the existence of small ledges, and could only be decided by actual trial, which I determined to make the following morning.

But even while I was looking, a vast cloud of white mist came rolling up from the lake and hid Mount Odaray from view. Soon mist poured out of the Death-trap col as from some fabled entrance to Avernus, and all the tops of the peaks were hidden. The winds blew in every direction, whirling the mist through the depressions in the walls, until we were enveloped in cloud and only the nearest trees were visible. Then came flakes of snow, few at first, but rapidly increasing till the air was full of the driving storm. So hastily had this come upon us that we had no time for preparations, and so, crouching under the boughs of a small spruce, we passed a sleepless night, keeping a roaring fire going, and watching the ground whiten and deepen with snow around us.

In the morning it was several inches in depth, and we began a hasty return to Hector. Great care was necessary in skirting the slopes of heather and small spruce above the cliffs of Lake O'Hara, as a slip would be fatal, and we carefully prepared handholds by brushing away the new snow and grasping the heather and spruce boughs below. We descended by a gorge near the end of Lake O'Hara, and making a cut off from the stream were soon at the foot of the Wiwaxy ridge.

Then for two hours we struggled in the thick forest before meeting the stream again, quite near the cataract. At 4 o'clock we reached Hector, after a six days' absence.

After an absence of five days on a trip to the coast, I returned to Laggan the following Tuesday to make an expedition to Mount Assiniboine. This peak, 50 miles S.W. of Banff, I had seen from the Twin Peak at Banff in the summer of 1893, and had ever since desired to visit. A glance at Dr. Dawson's map will show that the region E. of this mountain, lying between it and the Whiteman's Pass, is unmapped and unexplored. From the W. the peak was represented as accessible by the Simpson Pass from Cascade (there called by its old name, 'Castle Mountain'). This pass or trail followed the Heely Creek to the summit of the watershed, descending on the other side by the Simpson River and Vermilion River to the Kootenie country. A stream was represented as flowing into the Simpson River from the E. and rising at the base of Mount Assiniboine. Intending, therefore, to follow the Simpson Pass as far as this stream, I arranged to meet Carryer at Castle Mountain (on the map called by its old name

Silver City), he taking provisions down from Field by train, and I riding a pony down the old Tote road from Laggan.

I had previously written to a famous prospector,* who I had heard was living at Castle Mountain, and had acquired a large knowledge of the trails to the S., requesting information concerning the best route to Mount Assiniboine, but he had been unable to tell me more than I already knew.

Just as I was leaving the chalet at Lake Louise with my pony, Colonel R. O'Hara, one of the most experienced travellers and mountaineers of the Rockies, came in from an attempt to penetrate, by the White Man's Pass, into the region that I was about to try from the Simpson Pass. He had been stopped, as I understand, by forest fires then raging south of Banff, and filling the atmosphere with haze. He had made a number of journeys back from Hector, and, I believe, was one of the first to see the beautiful lake which I have called by his name. Colonel O'Hara had also an idea of trying to reach the Simpson Pass from the Vermilion Pass (which ran south from Castle Mountain, the old Silver City), his plan being to cut across from the summit by way of the Twin Lakes.† I had no idea at that time of going anywhere near the Vermilion Pass, though subsequent events made me very familiar with it.

I followed the old Tote road, indistinct at best and in places obliterated. The broad Bow Valley, flanked with peaks, their summits white with new snow or wrapped in fleecy clouds, opened before me like a great highway. Of the several streams which I forded, the Pipe Stone only gave me any difficulty. As I was late in leaving Laggan, I was obliged to stop for the night at Eldon, a small log hut for the railway hands.

After a sleepless night upon a narrow bench, I hurried on to Castle Mountain, where Carryer was awaiting me in the prospector's house. I expected to proceed at once to Cascade, in order to start over the Simpson Pass, but was led to change my plan through some information given by the prospector, who assured me of the existence of an Indian trail running from the lake near the summit of the Vermilion Pass down to the Simpson Pass. This was the idea suggested by Col. O'Hara, though I am not aware that he had known of a trail. This would be shorter for me than to go to Cascade, and would bring us to the Simpson Pass at a point quite near the stream we desired to ascend. Further, our outfit could be ferried over the Bow in a skiff owned by the prospector. Carryer thought the Vermilion Pass much preferable, therefore, and I finally decided to cross the Bow at once.

Ferried over in safety, we followed the S. bank for several miles toward Laggan until we came to the Vermilion trail. Unfortunately for travellers, the railroad has cut numerous roads for hauling ties from the forest, and it was difficult to follow the main trail. To add to our troubles, it soon began to pour, and rained steadily all the afternoon as we toiled through the woods in dripping mackintoshes.

* 'Joe' Smith, whom Mr. Green consulted in regard to the Vermilion Pass.

† This, I understand, he accomplished in the summer of 1895.

The pass became almost a flowing stream, and with uncertainty as to where we should spend the night, our situation was far from reassuring.*

We reached an old logging camp at 5 o'clock, and at 6 came to another, where we passed a comfortable night in one of the huts. The rain had stopped by morning, but we lost nearly three hours in getting the right trail. Again at noon the trail failed, and we searched in the dense woods for two hours before finding a tentative trail which we followed for two hours to a lake. Here I waited while Carryer returned for the horse, which we had left behind, and as it was late when he arrived, we camped for the night.

The lake on which we camped was undoubtedly the one mentioned by the prospector, but a hunt for the trail of which he spoke was fruitless, and I am inclined to think it had been obliterated by time. The lake was small, but the image of Castle Mountain to the N., mirrored in its surface, made, with the foreground of green, a charming picture. To the S. a snowy dome (Mount Ball) and lower peaks appeared. We had been obliged to come without a tent, as we had but one pony; but heavy sleeping-bags and rubber blankets answered every purpose.

Next morning we followed the Vermilion trail over the summit, across flowering meadows and thin woods, and descended the Vermilion Creek on the other side, having decided to continue on to the Simpson River by way of the Vermilion—a roundabout way, but unavoidable, as we had failed to discover the prospector's trail.

For the rest of the day, and every day until we reached the Simpson River, it was a succession of trail hunts and losses of time. The trail was well-nigh extinguished from *débris* and freshets, and the forest was very thick. That night we made our camp upon a sparsely-wooded island. The ground was damp, and rain fell during the night.

Next morning we threaded our way along the river flats, having reached the main stream of the Vermilion, which joins the other from the N.E. This stream may be found to rise at the head of the Opabin Valley; its source has not been definitely determined. It is doubtless named from the peculiar characteristic colour that coats the stones and marsh grass of the river flats. †

After making the bend to the E. the Vermilion Valley lay before us, broad, and bounded by low hills to the S., with higher peaks to the N., topped by the snows of Mount Ball. During the course of a trail-hunt, soon after, we encountered the 'falls' of the Vermilion—a beautiful cataract of some 50 ft., resembling the cataract of the Wapta Creek,

* As I shall later explain, Banff is a much preferable centre from which to start for extended expeditions. Mr. T. E. Wilson, of that place, has started a most excellent bureau of outfit, providing packers, horses, guides for trails, &c., though not as yet trained guides for climbing. They, of course, are not yet in sufficient demand. For a certain class of climbers, however, the greatest pleasure consists in dispensing with guides on the mountain, particularly upon those that are entirely unascended.

† Ochre, as mentioned by Dr. Dawson.

back of Hector. We camped that night at Snow River—a cold spot, swept by winds from the glaciers on Mount Ball.

The following morning—Saturday, September 9—after toiling for five hours through a pathless forest, we emerged, tired, hot, and generally uncomfortable, upon a circular opening in the woods, through whose long, waving grass was heard the ripple of a brook. Ferns, waist-high, fringed the edges; streamers of moss waved from the boughs; while many-coloured painter's brush, pink and white spireas, and the graceful columbine grew in profusion around, together with yellow buttercups, pink and white pyrolas, and the ever-present daisy. Blue lupins and larkspur were contrasted with curious yellow and red and white fungi, and the air was sweet with the scent of wild roses.

Unable to reach the Simpson River before nightfall, we camped in a swamp on the edge of a thick forest. As the sun sank lower and lower behind Mount Ball, its snowfields glowed with crimson against the sky, fading into violet and purple till they shone like silver in the light of the rising moon. A single aiguille of prodigious steepness towered black above the other mountains upon the S. side of the valley.

We reached the Simpson at noon next day, September 10. The frequency and great size of the bear tracks on the river flats, together with tracks of cariboo, elk, and bighorn, indicated an abundance of game. There ought to be good hunting in this valley, for it connected directly with the celebrated Kootenie country, so famous for its game.

Leaving the Vermilion, which here bends to the S.E., we ascended the W. bank of the Simpson River by the Simpson trail, and camped at 6 o'clock. The following noon we had reached the stream desired, the third from the Vermilion, flowing from the E. As the only stream flowing into the Simpson from the W. was represented on Dr. Dawson's map as about a mile further on, we made certain of our stream by continuing until we met this stream from the W. Returning thence, we forded the Simpson, and began to ascend the stream from the E., which from subsequent developments I called Waladoo* Creek. After slow progress among the stones and boulders, we discovered an ancient Indian trail upon our left, by which we ascended some 1,500 ft. above the Simpson River. Here our stream made a sharp turn to the right, and as it was nearly night we camped in a grove of spruce.

In the morning the ground was rapidly whitening with snow, and we continued our ascent of the valley, unable to see any distance ahead. The exposure had caused in me an enlargement of the palate, preventing clear speaking and causing me much alarm. This was completely cured in $\frac{1}{2}$ hr. by the application of a few drops of sap squeezed from the blisters of the bark of a balsam tree, an Indian remedy suggested by Carryer.

The Indian trail had long since disappeared. About 1 o'clock we reached a small lake and further on a larger one, over $\frac{1}{4}$ mile in

* Meaning 'deception' in Carryer's native tongue, so called on account of our being deceived by the storm.

length, surrounded by great black walls, but the storm shut off all view. Standing in the meadow at the head of the lake we ate a cheerless lunch, and then began to ascend the steepening slopes of heather, past scattered groups of spruce and tamarack, toward the great misty walls ahead, which I then believed must be a portion of Mount Assiniboine.

It was nearly 6 o'clock when we reached the last group of pines and saw before us a ridge whose summit, hidden in cloud, was evidently the end of the valley. Judging from Dr. Dawson's map, it seemed to be a spur of Mount Assiniboine, and we camped in the group of pines, believing that we were under the shadow of our long-desired, though as yet invisible, mountain.

Making a rough shed of boughs, we covered it with rubber blankets; a little runnel in a hollow to the right supplied us with water, and there was good grass for the pony. Thus closed Thursday, September 13.

The snow fell with brief intermission until the night of Saturday, the 15th, when for a brief hour the moon shone forth, burnishing the white landscape with its golden light. Doubtful of obtaining any other photographs, I exposed a quick plate for $\frac{1}{2}$ hr., pointed directly at the moon, which shone through a depression in the ridge. The result, printable though faint, shows a string of moons, owing to the moon's motion while under occasional clouds. The skyline of the ridge ahead was hardly 500 ft. above us, though on either side the walls rose from 1,000 to 2,000 ft. Thus there was an evident pass into a valley beyond. Nothing was seen of Mount Assiniboine, and in the morning, starting at 5 o'clock, we trudged through snow from 1 to 2 ft. in depth up the long slope on the right to the top of the ridge. In places the snow had frozen and was as compact as old *névé*.

On reaching the top a valley was seen on the other side, broader than that whence we had ascended, and filled with writhing mists. These, touched with the faint colours of sunrise and tossed by the morning winds, swept by me and about me, showing snatches of superb vistas through their damp grey openings, till I felt like some aerial navigator sailing over peaks and valleys.

When I finally had an opportunity to observe the other side of the valley, the first object I saw was a beautiful lake lying a little below tree-line at the base of a great glacier-crowned wall. Above this lake, encircled by glaciers at the foot of the walls, which rose 3,000 ft. above it, was a smaller lake. The top of the wall was hidden by moving clouds, and I believed it to be Mount Assiniboine at last. After taking a few photographs I returned to camp for lunch, and in the afternoon we crossed the divide to the right of the ridge in order to visit and name the lake.

Our visit was partly for purposes of fishing. The extension of our trip had sadly diminished our larder, and only two days' provisions remained. This fact, together with our unfamiliarity with the Simpson Pass to the Bow River—a distance requiring at least 3 days, as we estimated—caused us considerable foreboding.

Having crossed the divide and descended the burnt timber on the

other side, we found the valley free from snow. Reaching the bed of the stream, we followed it to the small creek observed from the ridge to flow from the lake. Ascending this creek, we stood upon the bank of the lake at 3 o'clock.

This beautiful lake, than which I have seen none finer in the Rockies, and which I named Assiniboine, is about 1 mile in length and slightly less in width. Its colour was a dark green and it was fringed with grass and shrubs and slopes of pine.* The great walls rising behind it with their fine blue hanging glaciers and the white snow below made it a scene never to be forgotten by one who has seen it.

Carrier's luck at fishing was nil, and he decided to fish down the creek and meet me at the junction of the stream.†

I had followed the left bank of the lake to get a few more photographs, and was about to leave when, happening to glance up at the rapidly moving clouds that hid the top of the wall, I observed through a sudden opening a single needle-like point glittering against the blue sky behind like a bit of black obsidian beneath a silver veil. It was indeed Mount Assiniboine; for, though the apparition lasted but a second, I obtained other sectional views of the gigantic pyramid. The walls above the lake seem but a support for the base on which it rests, and the summit must be at least 2,000 and possibly 3,000 ft. above the summit of the wall. The altitude of the lake was 6,600 ft., and calling the wall 3,000 ft. and the pyramid from 2,000 to 3,000 ft., more, the altitude of the summit becomes about 12,000 ft. above the sea. Dr. Dawson estimates the height at about 11,500 ft., which is, I think, too low. Perhaps ‡ 12,000 ft. would be a cautious estimate which would make the peak higher than either Mount Lefroy or Mount Temple. The N.E. and N.W. arêtes seemed from these sides inaccessible, and attempted ascents should be made from the S.E. or S.W. side. Carrier, when I joined him, had also seen the peak, and was much impressed by what he considered the most awful mountain he had ever seen.

On our return we killed a large porcupine and some ptarmigan, which solved the vexed question of provisions, and at 7 o'clock we closed an eventful day with a delicious ptarmigan stew.

How to cook the porcupine was a subject of debate. The following method gave entire satisfaction. All night he was roasted on stakes, afterwards he was parboiled and then stewed.

The valley in which we were camped, with its creek and lake and ridge, I named Walandoo, or deception. The river § and valley beyond the ridge I named Assiniboine, like the lake.

* The burnt timber in this valley was glossed over with the recent snows. It is a sad defect, as I shall mention later. The shores of the lake, however, are in places beautifully wooded.

† Doubtless because of the burnt timber below. Walandoo Lake, as was afterwards found, contains numerous small trout.

‡ Acquaintance with the N. and S. sides has led me to increase this estimate by several hundred feet.

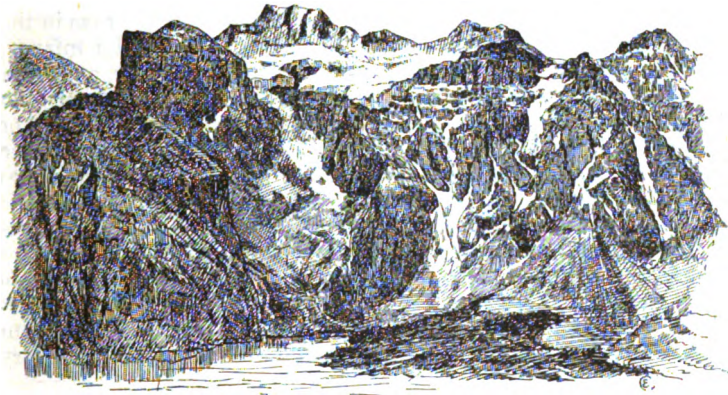
§ As I found in 1895, it is the upper portion of the main North Fork of the Cross River; I have therefore restricted the name Assiniboine Creek to the small tributary from Lake Assiniboine.

It was now necessary to hasten back to civilisation. Accordingly, we broke camp next morning, and on reaching Lake Walandoo I photographed it, and likewise the amphitheatre to the north. Most of my plates on this expedition were scratched or light-struck, as I had had only my sleeping bag to change them in.

We descended on the left side of the stream until we had rounded the corner, then joining the old Indian trail on the right side* and reaching Simpson at 5 o'clock. By 6.30 we were camped by the banks of the clear stream flowing from the W. A chinook wind swept up the valley and the air was warm and springlike.

Next morning we followed the Simpson River until the trail turned off to cross the divide. We were wet to the skin nearly all day with continual fording of the stream, occasional showers and soaking underbrush. As we neared the summit of the pass we obtained a beautiful retrospect over the Simpson Valley. Upon the summit, which is, of course, the watershed, we encountered a heavy snow-storm, and a night in the open seemed imminent, but we found the Heely Creek trail on the other side, and descending by it we camped in the woods by a little stream at 6.30.

Making rapid time next morning, favoured by an ideal day, we were soon descending the beautiful valley of Heely Creek. A



MOUNT HEEJEE AND LAKE HEEJEE.†

pretty peak to the W. was in sight nearly all the morning. The mountains reminded me of the limestone peaks of Salzkammergut, their summits white and lower slopes of varying shades of green. Many of the peaks were very sharp.

At 4 o'clock we reached the broad valley of the Bow. Fording without difficulty on horseback, we spent a comfortable night in the clean section house at Cascade siding, about a mile up the track toward

* Its upper portions must have been worn by Indian hunters. Mr. T. E. Wilson has informed me that the lower portions were opened by himself.

† See p. 113.

Laggan. I must mention the beauty of the ford of Simpson Pass where we crossed the Bow. The river formed a foreground for the graceful range of distant peaks to the S., whence we had come.* Our circuit by the Vermilion had taken 13 days from Castle Mountain round to Cascade, and we had travelled nearly 150 miles.

I flagged the train next morning and was soon at Laggan, where I was joined in two days by Carryer, who rode the horse up the Tote road, arranging, however, not to stop at Eldon. Further explorations being impossible, owing to continued snows, I left shortly for the east.

IN MEMORIAM.

/ CHARLES PACKE AND THE PYRENEES.

I.

As an intimate friend of the late Charles Packe, and his fellow-mountaineer in the early explorations of the highest regions of the Pyrenees, thirty-three years ago, perhaps I may claim the melancholy privilege of reviewing his long Pyrenean career, dating from the year 1858 (or 1859).

In those distant times, whatever may have been the case in the Alps, mountaineering was, in the Pyrenees, quite in its infancy, and climbing entailed all sorts of privations, hardships, and even risks, unknown to the present generation. Ice-axes had never been heard of, and when we crossed or scaled steep slopes of blue ice or frozen snow, we had to cut our steps either with a microscopic pocket-axe, which was often dropped and lost, or with sharp stones and slates. Speed was impossible. The rope had only just made its appearance: it was scarcely ever used, and in crevassed glaciers we trusted almost entirely to sounding with alpenstocks. As for guides, there were barely half a dozen good ones in the whole range of the Pyrenees, and even those only knew their own district. They were useless elsewhere, and we had to guide them ourselves, with the help of a compass and of the most rudimentary maps, full of mistakes.

On the Spanish side things were still worse, for there were neither maps nor guides; *a fortiori*, no guide-books. And yet it was just there, behind the frontier, that the proudest Pyrenean summits solemnly stood in unknown and snowy solitudes. Indeed, to a mountaineer, their mystery made them as attractive as the North Pole or the peaks of the moon. The Néthou (3,404 m.) had been climbed about a dozen times, but the Posets (3,367 m.) only once or twice, and the Maladetta (3,312 m.) never. As for their

* The Vermilion range, so beautifully seen from the bridge spanning the Bow at Banff. That peculiar flat-topped peak, furthest E. of those seen from the latter point, while bearing, as do the others, glaciers of considerable size upon the N. slopes, should offer easy rock climbing from the S.

numberless satellites exceeding 3,000 m., they had not yet even a name! Even the great frontier peaks were little known in those distant times (1860), and very few of them had been conquered.

Such was the state of things when Packe first made his appearance in the Central Pyrenees, where, with only two exceptions (Mont Perdu and Cylindre), are grouped all the Spanish summits exceeding 3,900 m. This was thirty-six years ago (1860). In that year Packe first explored the now famous valley of Arras (or, rather, Ordesa), which runs E. and W. on the Spanish side of the Cirque de Gavarnie, and very much resembles the great American cañons. It is the haunt of the bouquetin. Although Ramond had had a glimpse of its wonders in the beginning of the century, they had so utterly been neglected and forgotten for sixty years that Packe's exploration was a second discovery. Following, eastward, the southern or Spanish side of the chain for about 50 kilomètres, through Fanlo, Escalona, and Benasque, he finally re-entered France by the Port d'Oo (3,001 m.).

In the same year (1860) we find him on the summit of the Néthou, the highest peak in the Pyrenees, and then very seldom climbed (3,404 m.). He then passed into Catalonia, explored the Montarto, and scaled one of its many peaks, or rather 'teeth' (over 3,000 m.).

In the following year (1861) he accomplished the third ascent of the mighty Posets (3,867 m.), which he reascended by another route in 1863; and about the same time he made the first ascent of the Maladetta (3,312 m.) and of the Maliberne (3,067 m.).

In 1864 he, with his friend Mr. Mathews, crossing the snowy Col de la Salenques, east of the Néthou, went all round the immense and chaotic mass of the Monts Maudits—a long and thoroughly 'Alpine' tour of four or five days in the most intricate, loftiest, and most mysterious regions in the Pyrenees.

The Spanish slopes of the Port d'Oo (3,001 m.), a majestic desert of huge boulders, eternal snow, and frozen ponds, often became his home for days together: he loved to explore them, sleeping no matter where or how; and another district which he also seemed to cherish was the Lac Glacé du Portillon (in France)—a sort of polar lake, always studded with ghastly icebergs. But Charles Packe's most memorable feat in the Spanish Pyrenees, and his greatest service to the geography of the loftiest part of Aragon, was his admirable map of the Monts Maudits, of which the whole credit is due to him alone, for no one could help him; he had neither predecessors nor even books to guide him, and the wild and vast regions he so conscientiously explored and mapped in 1866 covered no less than 1,000 square kilomètres, where none but chamois hunters had trodden before him.

Of course there are many unavoidable errors and gaps in such an immense work—the very first of its kind, where all was new, and done by *one* man, whose sole guides, practically speaking, were his compass and his instinct. However, even now, when more perfect, though smaller, maps have completed our knowledge of

those bewildering masses of snowy peaks, Packe's map of thirty years ago is very useful, and its author has much simplified the task of those who followed him on that particular ground.

When rest became necessary, fishing was a relief to him, and consoled him for inaction. Many a romantic night have I spent with him on the desolate shores of the Rio Bueno lakes, buried in sheepskin bags, under the stars and moon, and happier than children or monarchs. And yet it was terribly cold. When the sun rose, we shook hands and parted for the day, but always met in the evening, the very best of friends, though we had not the same pursuits or tastes. Whilst I indulged in eccentric, solitary ascents of untrodden and snowy peaks, which swarmed in those times in Aragon, and where I never met a human being, Packe did more useful things. He mapped those peaks, he measured and named them, botanised in their valleys, and read their history in their rocks and fossils. For he was a mountaineer in the best and noblest sense of the word; he was the Tyndall of the Pyrenees. Although he lived to see the deplorable transformation of 'Alpinism' (which, to him, was a sort of religion) into mere athletics and gymnastics, he could neither condone nor understand acrobatic performances in the mountains, unless they could not be avoided. He did nothing for 'show,' never cared for 'effect'; everything 'theatrical' shocked him, and he never tried to excite wonder. Indeed, he was the most modest of men, and never spoke of his own achievements or merits. Even in his splendid 'Guide to the Pyrenees,' where almost all the ascents described were accomplished by himself, his personality scarcely ever appears.

He had a marvellous constitution. He enjoyed nothing so much as sleeping in the open air, even above the snow-line, in a bag of sheepskins, and taught me to do so. A sleeping-bag is the best friend of a Pyrenean mountaineer; he cannot do without it. We never had a tent. Hundreds of nights have I spent in my bag, and in the open air, at all heights, even on the very summits of the loftiest Pyrenean peaks: on the Nêthou (3,404 m.), on the frozen and stormy Mont-Perdu (3,352 m.), on the Vignemale (3,298 m.), &c., and, except in snowstorms, I generally slept well, even with the thermometer below freezing point; so I could not help saying a word in favour of the bag.

And now, to sum up Packe's labours in the Spanish Pyrenees, and without ignoring or trying to minimise in any way the very great merits or the splendid discoveries and achievements of his many disciples and successors—MM. Schrader, Wallon, Lequeutre, Gourdon, Trutat, Comte de Saint-Saud, Emile Belloc, and others—I think I may fairly and safely say that he was our master, model, and leader, and that we all owe him admiration and gratitude.

On the great frontier peaks of the Central and Western Pyrenees, Packe also distinguished himself by scaling the Perdighero (3,220 m.), where it is probable no one had ever gone before him (in 1860 or 1861), by the first ascent of the Munia (3,150 m.),

near Héas, and above all, by his memorable ascent of the Balaitous (8,146 m.) in 1864, after a fruitless attempt in 1862.

This threatening and proud peak, which was unquestionably the most dangerous in the Pyrenees before the discovery of new and easier routes leading to its summit, had, it is true, been once conquered before; but it was in 1825 by the officers of the *Etat-Major*. It had never been climbed since, and after the lapse of almost forty years, no one even knew in the least how they had reached it. I may add that our lamented and illustrious colleague, John Ball, made an attack on the Balaitous in 1863, but without success. Packe's triumph over this noble peak therefore had all the merits of a discovery and of a first ascent. As for the difficulties he encountered, they may be measured by the fact that he wandered for seven days on and almost all round the mountain before setting his foot at last on its real summit, although he was at that time young, experienced, and rash. It was by the western arête he succeeded. I climbed the peak myself ten days later by the same route, and after five journeys up or down this terrible arête, and thirty-seven years of Pyrenean ascents, I still think it is the most perilous *mauvais pas* of the whole chain. But it has long ago been given up for easier *couloirs* on the north-western side of the formidable precipices which surround the whole of this Pyrenean 'Cervin,' and the perils of the Balaitous are a thing of the past. Ladies have climbed it, although neither cables nor chains have as yet profaned it. It has never been dishonoured!

Packe's favourite guide was the celebrated Henri Passet, of Gavarnie, whose first cousin, Célestin, was mine. These two splendid guides, the best the Pyrenees have ever produced, have also won laurels in the Alps on the Mèje, the Ecrins, the Cervin, and the Dru, &c., and Mr. Whymper had such a high opinion of them, that he offered them the honour of escorting him to the Andes; an honour which, I much regret to say, sentimental reasons induced them to decline. 'Exile' will never be popular in France! However, Henri Passet once went as far as the Sierra Nevada, with Packe, some thirty years ago, and they both slept on the summit of the Mulahacen (8,555 m.).

Before ending this imperfect review of my friend's Pyrenean career, perhaps I may add, without trespassing on sacred ground, that Packe was the model of friends. He was sincerity itself, he was almost too transparent, for he could no more disguise his antipathies than his sympathies, or indeed any of his feelings. One read through him at once, he flattered nobody, and would have been a bad diplomatist. Indeed, if plain-speaking can ever be called a failing, it was the only one he had. His death has thrown the Pyrenees into mourning, and I am sure I have not over-praised him in any way, for if love is blind, friendship is seldom so, and certainly not in this case.

HENRY RUSSELL.

Pau: September, 1896.

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II.

Mr. Packe's connection with the Pyrenees has been so fully and picturesquely sketched by his old friend Count Russell that it only remains for me to add the dry facts of his career and a few reminiscences of him which may enable the younger members of the Club to realise a character which was surely unique.

Charles Packe was the eldest son of Captain Edmund Packe, of the Royal Horse Guards, and was born in 1826. He went up from Eton to Christ Church, Oxford, in May 1845, and took his degree in 1849. He had already been entered of the Inner Temple in 1847, and in 1852 he was called to the Bar. He never practised seriously, and the attraction of the mountains soon made itself felt. 'The Spirit of Travel,' now a somewhat rare book, which he published in 1857, shows that though not yet a thorough mountaineer, he had already become familiar with the hills of our own islands and the mountains of Central and Southern France and of Switzerland. It is clear from this that the date assigned by Count Russell for his first acquaintance with the Pyrenees is some two or three years too late. In 1862 he brought out his well known 'Guide to the Pyrenees,' of which new editions appeared in 1864 and 1867. In his zeal for the task he actually passed a winter in the Arctic climate of Gavarnie, when wood was so scarce that the kitchen fire was the only one in the house. So thorough was his work, and (it must be added) so slow is the development of the Pyrenees, that after thirty years it still remains the best work on the subject.

In 1867 his uncle, Mr. Charles William Packe, M.P., of Prestwold, died and left him the owner of Stretton Hall, Great Glen, and of the Branksome Tower Estate at Bournemouth. He could not keep both, and he chose the former as having been longer in the family. A different choice would have made him in the end a millionaire, but he was not the man to regret it. His means were ample for all he wanted, and he could indulge without stint in all his favourite tastes—books of all kinds, costly scientific instruments, travelling, and, last but not least, lavish but half-surreptitious support of deserving charities.

The attrition of our modern life has a tendency to produce some monotony of character. There are numerous types, but within their classes men resemble each other as much as houses in a street. Mr. Packe was more like a rambling old mansion full of all kinds of unexpected and inconsistent nooks and corners. Such a house lacks many modern conveniences. The ceilings may be low, the rooms dark, the floors uneven, the roof eccentric, the passages draughty. At first you cannot find your way about it; you bump your head against beams, you fall down unsuspected steps, you wonder how any one could ever live in such a place, and in the end what happens? You get to know it, and you learn to love it. The convenient modern residence begins and ends as 'a brick box with a slate lid,' but the other is a real home for which you can feel a personal affection. There is an element of romance about it. It

is endeared to you by its very incongruities; so it was with him. His character was one of the strangest complexity, full of the most striking contradictions. It is not common for the same man to pursue experimental science with zeal and to maintain to an advanced age familiarity with the literature of Greece and Rome; but it is still rarer to find a country squire living in Leicestershire, and owning one of the most famous fox-covers in the county, who, nevertheless, detests hunting. His political views again, though decided enough, defied classification. His frame was feeble, yet capable of enormous exertion. Lastly, under a manner which was often, as he termed it, 'brutale,' and modes of speech steeped in prejudice, he concealed one of the tenderest hearts that ever beat and an unusually open mind.

The love of abstract truth and justice which most people find no difficulty in controlling amounted in his case to an overmastering passion. Harmless social hypocrisies and conventions were regarded by him as so many breaches of the truth, and compromise of every kind as a deliberate and venal sacrifice of principle. Once convinced that a given course was right, he was ready to maintain it and enforce it against all odds and at any cost of inconvenience to himself or others. In his nature, and even in his appearance, there was something of Don Quixote, and something also of his own tough old Puritan ancestor, Sir Christopher, Lord Mayor of London in 1655, who was such a resolute supporter of Cromwell, and in 1657 so nearly succeeded in changing him from a Protector to a King. He had all the independence of the Puritan, all his contempt for such social accomplishments as tact, diplomacy, and grace of manner, and he had also his rugged sincerity and his thoroughness in work. He showed this in his walking. He was past fifty when I first walked with him, but he went wonderfully well. It was our custom in the Pyrenees to rise at daybreak after a night on the hard ground, take a cup of tea and a nibble of dry bread, and thereupon walk for five, six, or seven hours before breakfast; after that there was no more eating till we made our bivouac a little before sunset, and no rest, except perhaps an hour's siesta in the hottest part of the day. Exertion of this sort maintained for a week on end with scanty food and regardless of weather demands a strong constitution and considerable staying-power. On a good road his whole-day pace was moderate—1 kilometre in 10 min. (i.e. 1 mile in 16 min.)—but he could do much more when he chose, and must in his youth have been an exceptional walker. We walked together a good deal in the 'eighties' among the English, French, and Spanish mountains, to the extent of at least 3,000 miles, so I can answer for his endurance.

It is not necessary to dwell upon the position which he enjoyed in the Pyrenees, and the honour in which he was there held. It was a great privilege to visit them in the company of such a man. I recollect the Prince de Joinville, who went there a good deal, saying one day, 'Mr. Packe is the king of the Pyrenees; he

invented them'; and he made a point of paying him a call of ceremony. The French Alpine Club recognised the value of his work by making him an honorary member; a distinction which very few Englishmen enjoy, but by the natives he was absolutely venerated from end to end of the Pyrenees. They would do anything for him, even to the length of endeavouring to take an interest in his botanical researches. In many of his wanderings he was accompanied by one or more of his great white Pyrenean wolf-dogs, and he had an ingenious plan for utilising them, believing that a traveller on glacier, duly roped between two of these powerful animals, would be secure against the danger of concealed crevasses. But he was ever an enthusiast on the subject of dogs, and he considered their comfort far more than his own. I believe he began with the idea that dogs were an oppressed race, and that was at all times a passport to his sympathy. There never was a man more ready to fight the battles of the weak against the strong, or to champion the cause of the absent, and he was the staunchest and most loyal of friends.

W. P. H. S.

ROMAN IMBODEN.

ROMAN IMBODEN was born in 1870. As the eldest son of a famous guide he had early opportunities for learning his profession on the occasions when he accompanied his father, as well as excellent training in what one may call the more intellectual, as apart from the mere physical, qualities essential in a first-class guide.

As far back as 1886 Roman was engaged for most of the summer by Mr. G. S. Barnes, who employed him as porter on the various guideless expeditions which he and his friends made. The following winter Roman spent with me in Switzerland. The first testimonial I find in Roman's 'Führerbuch' is signed Frank Littledale, and dated 1888. It refers to ascents of the Ober Gabelhorn, Weisshorn, Rothhorn, and other first-class Zermatt and Oberland peaks, and describes him as 'a first-rate climber.' That winter Roman spent in England, and his employer wrote in 1889: 'I know of no youth who has the same prospective future,' adding a little later that Roman had saved the lives of his party on Mont Blanc when they were overtaken by a terrible snow-storm, and his keen sight enabled him three times to regain the track. 'It was a fearful half-hour,' he wrote, 'and but for the boy's intelligence we might never have come down alive.' It is signed S. Aitken.

In 1891 he was for the first time leading guide, and in 1892 I took him with me as my leading guide to Dauphiné, where amongst other expeditions we crossed the Ecrins and ascended the Meije and the Pointe des Etages. In the following year he made a fine series of ascents with Mr. E. Garwood, who has written a notice in his book which any guide would be proud to possess.

In 1894 he led me up the Monte di Scerscen, though he had no knowledge whatever of the Engadine Mountains. The peak had not been ascended for a couple of years previously, nor has it been

done since that season, and we were handicapped by 3 ft. of fresh snow. Three days later he went up with me again, crossing on this occasion to the Bernina, and choosing his way along the arête so skilfully that we never met with one really hard step, and were back at St. Moritz before dark. The same year Roman made with Mr. Garwood the first ascent of the Täschhorn from the Dom, as well as many difficult ascents in the Dolomites. He subsequently repeated his Dolomite climbs with Mr. B. Wainewright, and invariably led and came down last.

Last autumn, with his father and me, he crossed the Rothhorn twice in one day. He also led us up the Schallihorn by a new route up the central south ridge. On September 25 his father and I made the last ascent either of us ever accomplished with Roman, and strangely enough it was of the Lyskamm. As we stood together on the summit we looked at that fatal ridge from the Lysjoch, of which Roman often said, 'I don't like it, you never know whether you are on the cornice or not,' and then we retraced our steps down the Italian side of the mountain. This is not the place to discuss the catastrophe of September 10. Full details will be found elsewhere. But Roman's friends, and they are many, know well that a better guide never lived, and feel a sharper pang of regret for his loss as having occurred on a place where no skill could have availed.

Roman lies in the little churchyard at St. Nicholas close to the graves of the three Knubels who perished on the same mountain. The value we, who knew him well, attach to his memory, will be borne witness to by the stone which his English friends are placing over his last resting place as a mark of our appreciation of his many noble qualities, and of his ability as a first-class guide.

E. M.

NEW EXPEDITIONS IN 1896.

[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.

LES BANS (3,651 m.=11,979 ft.) BY THE SOUTH ARÊTE. *July 25.*
—MM. A. Reynier and C. Verne, with Maximin Gaspard, Joseph Turc, and Casimir Turc, made this new route, which enables a

party to take this fine peak on the way from Ville Vallouise to La Bérarde. Towards the south end of the great east rocky wall of Les Bans there is a spur of rock, projecting into the Bans Glacier. Rounding this spur on its north side, its crest was attained in $2\frac{1}{2}$ hrs. from the starting point, a bivouac $\frac{1}{4}$ hr. below the foot of the Bans Glacier. The crest of this spur was followed to the main south wall of the peak, which was climbed, mainly by rocky couloirs, to its crest (2 hrs. 40 min.), the rocks being very steep and rotten. An hour along the ridge, first on its west, finally on its east flank, brought them to the south summit of Les Bans. The party was of opinion (a single observation with a level not having been satisfactory) that the difference between the north and south summits is very slight. This differs from the result obtained in 1895.* The descent to La Bérarde was made by the ordinary route.

PIC D'ARSINE (3,240 m.=10,630 ft.). *June 24.*—M. Reynier made the first ascent of this point, in 25 min. from the Col des Agneaux, by a snow slope and easy rocks. Three hours had been taken from the Col d'Arsine to the Col des Agneaux, the fresh snow being very soft and deep.

PIC DU DRAGON (3,188 m.=10,460 ft.). *April 27.*—M. P. d'Aiguebelle, with Louis Faure, made the first ascent of this summit. Following from Alpe the route up the west side of the Brèche du Dragon, or Brèche Gaspard, they climbed along the ridge separating the glen leading up to that pass from the Agneaux glen to its junction with the main ridge, a few minutes along which led to the peak (5 hr. slow walking from Alpe). The ascent is very easy and the view very fine.

PIC DE NEIGE CORDIER (3,615 m.=11,831 ft.) BY THE NORTH ARÊTE. *July 6.*—The last-named party made this new route. Starting from Alpe, they went up towards the Col d'Arsine, and mounted the left bank of the Arsine Glacier to the foot of the couloir coming down from the gap between the Pic de Neige Cordier and the Pic d'Arsine. The rocks on the left bank of this couloir were climbed to that gap, whence in about $1\frac{1}{2}$ hr. more by the snowy north arête (then in excellent condition) the Pic de Neige was attained. Six hours walking from the inn at Alpe.†

ROCHER DE L'ENCOULA (3,538 m.=11,608 ft.) BY THE NORTH ARÊTE. *July 23.*—Messrs. H. A. Beeching and P. A. L. Pryor, with Roman Imboden, made this new route. Leaving La Bérarde at 3.50 A.M., the party reached at 6 A.M. a huge boulder in the flat part of the Etages valley, a little beyond the Fontaine torrent of M. Duhamel's map. They thence mounted in an eastern direction to the foot of a long snow couloir (estimated length over 2,000 ft.), which led them (at 10.10 A.M.) to the foot of the north arête of the desired

* *Alpine Journal*, vol. xvii. p. 573.

† The notes of these four expeditions are taken from the *Revue Alpine*, 1896, pp. 235-6, 291-2. Mountaineers interested in the Maurienne and Tarentaise will find some very useful notes in the same periodical (pp. 236, 264, 292) relating to certain new routes made in those districts by M. Paillon and some friends.

peak, somewhat higher than the lowest point on the ridge between the peak and the Grande Aiguille. This north arête was then ascended (chiefly on its west side, the three rock towers being thus turned) to the summit of the peak, which was gained in $6\frac{1}{4}$ hrs. actual walking from La Bérarde. The return was made by the ordinary route down the east face. For the benefit of those who have no local knowledge it is suggested that in the 'Dauphiny Climbers' Guide,' p. 110, line 12, after the word 'circle' some such words as the following might be inserted: 'crossing the head of a deep ravine by a narrow grass ridge, and following the ill-defined sheep tracks.'

Cogne District.

COL DE PILA (c. 10,050 ft.). *August 10.*—Mr. G. Yeld, with François and Silvain Pession, of Val Tournanche, crossed this pass, which lies just S.W. of the Pointe d'Arpisson (8,252 m.). They reached it from Cogne *via* the Arpisson chalets in a snow-storm, but before this the clouds had lifted, so that they saw the exact position of the peak and the pass. Times have unfortunately been lost, but they would hardly have been average ones if they had been preserved, as the party went slowly from the chalets to the col, whereas from the col to Cogne they raced two-thirds of the way. The name was suggested by the Pila huts in the Val de Grauson.

Mont Blanc District.

POINTE DU PIOLET (3,679 m. = 12,071 ft.) *August 14.*—The same party made the first ascent of this peak, starting from the Triolet Club hut. Progress in the deep snow was excessively laborious, so that the party took nearly 6 hrs. up, the return being made in $3\frac{1}{4}$ hrs. actual walking. The mountain has four points; the lowest is that nearest to the Col du Piolet (from which the name suggested above was taken). Had the snow been less troublesome the party would have ascended the other three points; as it was, they climbed what seemed to them the highest—namely, the third counting W. from the Col du Piolet. On the ascent they went nearly straight up, while on the descent they kept more towards the E.

AIGUILLE DE TRONCHEY (3,500 m. = 11,483 ft.) *August 19.*—The same party made the first ascent of this beautiful peak, which is the highest on the ridge between the Grandes Jorasses and the Aig. de l'Evêque. Leaving the chalet of La Vachey at 2.40 A.M., they attained the summit at 12.4 P.M.—actual walking, $6\frac{1}{4}$ hrs. They did not touch the Tronchey Glacier (from which the name of the peak is taken), but kept to its E. On the way down they descended to the grass as fast as possible, 3 hrs. 13 min. walking; after that they went very slowly. The whole party were of opinion that the mountain is considerably higher than the height of 3,500 m. assigned to it on Mieulet's map. (No height given on Kurz's map.)

Chamonix District.

AIGUILLE DES PETITS CHARMOZ (2,868 m. = 9,410 ft., Kurz's Map).—On July 5 Messrs. J. H. Wicks and C. Wilson, and Miss Mary Pasteur ascended the Petits Charmoz by the S. arête. The col between the Charmoz and the Little Charmoz was reached by a rock scramble from the Mer de Glace side, whence the arête was followed pretty closely to the top, though in two or three places a small détour had to be made on to one or other face. The ascent afforded 3 hrs. of good rock-climbing, and, as far as can be ascertained, it had not been previously made, though the col has been reached from the Nantillons side, and the ascent completed by skirting along the W. face, somewhat below the ridge.

DENT DU REQUIN. July 9.—Messrs. J. H. Wicks and C. Wilson, with Alfred Simond, made the second ascent of this peak, by a route part of which is new. They ascended a steep little glacier which runs up into the S. face, and at its head attacked the rocks most to the W., near the foot of the S.W. arête. Profiting by experience gained on previous attempts,* they then kept well to the left (practically on the S.W. arête) till within 200 ft. of the point marked I. on the diagram given in 'Alpine Journal,' xvii. p. 16. They next worked diagonally upwards towards the right, by some difficult climbing joined the 1893 route at the point marked 2, and followed it, with little, if any, variation, to the summit.

Arolla and Valpelline District.

PETITE DENT DE VEISIVI (3,189 m. = 10,463 ft.) BY THE S.E. ARÊTE. August 17.—Messrs. F. Aston-Binns and O. K. Williamson, with Jean Maître and a porter, climbed in 2 hrs. from the Col de Zarmine to the top of this peak, keeping throughout on the crest of the S.E. arête, and traversing all the 'gendarmes' (some five in number), instead of passing below them, as had been done by previous parties. A large red pinnacle, about the middle of the ridge, and conspicuous from Arolla, could only be climbed by squeezing through a curious 'window' behind it, and then stepping across a striking chasm on to this pinnacle from a sharp splinter of rock which runs up to its W. The descent from the peak was made by the usual route by the W. arête.

POINT 3,576 MÈTRES (11,733 ft.) OF THE MONT BRULÉ; **AIGLE DE L'ANCIEN** (3,411 m. = 11,191 ft.); **AIGLE DE LENAIE** (3,146 m. = 10,322 ft.). July 15.—M. Julien Gallet, with Antoine Bovier, senior and junior, made the first ascent of these three peaks, all indicated and named on the Italian map. Starting from Arolla, they reached in 5 hrs. 40 min. the summit of the Mont Brulé (3,621 m.). Thence, without meeting any great difficulties, they followed the S. arête to the point 3,576 m. (25 min.), and, continuing in the same direction, reached the *Aigle de l'Ancien* in 40 min.

* *Alpine Journal*, vol. xvii. p. 87.

more, though the ridge was rather more difficult—there are two depressions in it, and a tower on it must be turned by an ice couloir on the W. A descent of 25 min. more led the party to the *Aigle de Lénais*. Hence 2 hrs. 5 min. were employed in the descent (towards the end in the bed of a torrent) of the very steep rock wall on the E. to the Prarayé glen, Prarayé itself being gained in $\frac{1}{4}$ hr. more.

BECCA VANNETTA (3,337 m. = 10,949 ft.). July 16.—The same party made the first ascent of this peak. Starting from Prarayé, they mounted the *Combe d'Oren*, but instead of making for the Col de Collon climbed the rocks to the W. of the Col de l'Aurier Noir, in order to gain the ridge. But bad weather and clouds forced them to the N., so that by snow-fields they gained the Col de l'Aurier Noir itself in 4 hrs. 40 min. from Prarayé. After waiting there an hour the mists cleared away, and the party mounted quickly in 10 min. to the point marked 3,379 m. on the Italian map. Thence they followed the ridge in a S. direction, but found after passing the point marked 3,367 m. that the arête became more difficult, there being gendarmes and a gully to be crossed. After 50 min. work they attained the summit of the *Becca Vannetta*, whence they saw a great cairn on the Monte Chavante (3,323 m.), more to the S. The weather did not permit of any further explorations. The party therefore returned in 1 hr. 5 min. by the same route to the Col de l'Aurier Noir, and thence reached the Col de Collon (55 min.), and Arolla in $2\frac{1}{2}$ hrs. more.

MONT BLANC DE SEILON (3,871 m. = 12,701 ft.) BY THE N. ARÊTE. July 20.—The same party effected this difficult new route. The foot of the peak was gained in 3 hrs. 50 min. from Arolla by way of the Pas de Chèvres. A quarter of an hour took them up a slope of snow to the gap between the main peak and the rocky spur, 3,222 m. (known as the 'Tête à Cust'). The N. arête was then attacked. The first third was fairly easy. Then enormous and very steep slabs of rock (which seen from below form a reddish pyramid) were encountered. It was found difficult to cross these, and the slope of hard ice on the E. had to be mounted for a few steps. Then came a series of towers and gullies, so that it was only after a struggle of 5 hrs. from the gap that the summit of the peak (to which the N. arête leads direct) was gained. The Col de Seilon was reached by the W. arête in 1 hr., and Arolla in $2\frac{1}{2}$ hrs. more by the usual route.

M. CLAPIER (3,357 m. = 11,014 ft.). July 21.—Mr. Alfred Topham, with Jean Maître and Pierre Maurice, made the first ascent of this peak. The shortest way from Bionaz round the S. base of the buttress marked 2,887 m. on the Italian map is to go past the C. Primo, and thence by a nearly level cow-path into the Faudery glen. This glen is then mounted for about $\frac{1}{4}$ hr. by a path on the crest of an old grass-grown moraine, which leads up the middle of the glen. Then they went W., up very steep grass slopes, and struck a steep 'ghyll' with a stone wedged into it, this being the only means of rounding the buttress, except at a much lower level.

The stone can be passed outside or by climbing behind it. From the top of the 'ghyll' it was necessary to descend about 50 ft., in order to reach the foot of the Clapier-Morion ridge over grass and débris. The ascent straight up the face of this ridge presented no great difficulty, the crest being gained at a point immediately next to the deep depression S.W. of M. Morion. The ridge was then followed in a S.W. direction, five cairns being built on the points crossed, the last one, although not the highest, being the summit of the M. Clapier as placed on the Italian map. The descent was made direct from the summit across the steep face by many gullies and chimneys, the original route being rejoined at the foot of the rocks. When descending to Bionaz it is not easy to find the top of the 'ghyll.'

Times : Bionaz to foot of peak, $3\frac{1}{4}$ hrs. ; to crest of ridge, 3 hrs. ; to the M. Clapier, 1 hr. Descent to débris, 2 hrs. ; to Bionaz, 2 hrs.

BECCA BOVET (3,404 m. = 11,169 ft.). *July 28.*—The same party made the first ascent of this summit, as well as of the two points marked 3,283 m. and 3,319 m. on the Italian map, all three rising in the centre of a long line of numbered peaks on the fine ridge separating the Val Sassa from the Valpelline. The name Becca Bovet was given to the culminating point in honour of the *curé* of Bionaz, Pantaleone Bovet, who has the shooting over this range. From the Valpelline the party ascended the Val Sassa to the glacier at its head. They then mounted diagonally in a S.W. direction up red rocks to point 3,283, and crossed over point 3,319 to the summit of the Becca Bovet, the arête being very interesting. A big cairn, with a staff in it, could be seen on the Becca Chatelnin, 3,208 m. to the S.W., this peak being accessible from all sides. The view from the Becca Bovet of the Otemma range, about the nomenclature of the peaks and passes on which there has been some discussion, was most instructive. After building a cairn on the summit the party descended by bad rocks in an E. direction, and finally went down by a stone-bombarded couloir to the Lac Mort. Prarayé was gained by way of the Lac Long and the Bas Oren Alp.

Times : Bionaz to C. Boetta, 2 hrs. ; to Sassa Glacier, 1 hr. ; to 3,283, 1 hr. ; to the Becca Bovet, $1\frac{1}{4}$ hr. Down to the Lac Long, $1\frac{1}{2}$ hr., and $1\frac{1}{2}$ hr. more to Prarayé.

Monte Rosa District.

VARIATION OF THE MISCHABELJOCH. *August 9, 1895.*—Messrs. Alfred Holmes, Eric Greenwood, J. J. Brigg, and W. A. Brigg, when descending from this pass down the Weingarten Glacier, followed the route of the first party,* till forced by the icefall on to the rock ridge which terminates in the point marked 3,234 m. on the Siegfried map. Instead of leaving the rocks for the icefall they reached this ridge by easy rocks, and descended by easy, though

* *Alpine Journal*, vol. i. p. 129.

somewhat rotten, rocks on to the N. branch of the Weingarten Glacier, which lies between the above-mentioned ridge and the S.W. arête of the Täschhorn. This branch was then followed down to the main Weingarten Glacier. In this way the icefall is avoided, while a near view is gained of the S.W. arête (or 'Teufelsgrat') of the Täschhorn.

Bernese Oberland.

KLEIN BREITHORN (c. 9,500 m. = 11,484 ft.) AND FEENKINDLSPITZ (c. 8,400 m. = 11,155 ft.). *July 25.*—These names are suggested for two peaks on the ridge running nearly due S. from the Lauterbrunnen Breithorn to the Burstspitzen. They were first climbed by Mr. H. V. Reade, with Theodor and Johann Kalbermatten, of Ried, on the chance that Messrs. Benecke and Cohen might have been attempting to climb them when they lost their lives on July 16, 1895. No traces, however, of any previous ascent were found. The ridge seems to have been known to Mr. Benecke as the Feenkindl; hence the name proposed for the lower peak, which is conspicuous from the Inner Fäflerthal, and, indeed, seems to be the top of the Breithorn itself. The second and higher summit is separated from the Breithorn by a big gap, up to which a very steep couloir runs from the W. By this couloir and the S. face (a steep ice-slope) the Breithorn has occasionally been ascended. The Klein Breithorn is well seen from the Petersgrat.

The 1896 party reached the summit of this ridge from the Inner Thalgetscher on the W. by a tolerably direct ascent up easy rock and patches of snow. It was much too broken to follow at first, so that the W. face was traversed for about an hour. Then the crest of the ridge was regained, and both peaks traversed, the lower being attained in an hour, and the higher in an hour more. It was a fine rock climb throughout, especially for the last two hours, when several towers had to be surmounted. The total times (actual walking) from Ried were 7 hrs. 50 min. up and 5 hrs. down.

JÄGIRN (8,510 m. = 11,516 ft.). *July 28.*—M. Julien Gallet, with Joseph and Gabriel Kalbermatten, made the first ascent of this peak, which had defied several previous attacks. Starting from Ried, they went up the Lötschthal as far as Eisten, then mounted to the right by a fatiguing goats' path, climbed up the rocks between the Inner Standbach and Augstkummen Glaciers, and by a very steep snow slope gained the Breitlaujoch in 5 hrs. 10 min. from Ried. This variant is thus much shorter than the route taken in 1895 by the late Messrs. Benecke and Cohen on the only previous passage of this col.* They thence crossed the glacier in a straight line towards the foot of the peak, traversing several great crevasses by good snow bridges (40 min.). They then climbed up granite slabs and an ice slope to the gap between the two peaks of the mountain. After going along the ridge in a N. direction for a short distance they traversed the W. flank of the peak, and by a

* *Alpine Journal*, vol. xvii. p. 584.

clamber up excellent granite rocks attained its summit in 2 hrs. 5 min. from its foot. The descent took 2 hrs. 20 min., as the party was caught in a great snowstorm, which prevented them for a long time from finding the Baltschiederjoch. Ried was regained after 15 hrs. out, hardly any halts having been made.

LAUTERBRUNNEN BREITHORN (3,779 m. = 12,398 ft.) BY THE N.E. ARÊTE. *August 2.*—The same party, reinforced by Joseph Rubin, made this new route. Ried was left soon after midnight, the Fafler and Guggen Alps were traversed, and the Jägi Glacier ascended. The usual route to the Schmadrijoch was here left, the party bearing to the left in order to reach the great rock wall leading up to point 3,887 m. on the N.E. arête of the peak. Owing to the enormous quantity of fresh snow on this wall (which would probably be not very difficult under ordinary circumstances), and the crossing of two dangerous couloirs, the ascent required a very long time. Above the rock wall a very steep snow and ice slope finally led to the arête at 10 A.M. This arête was then followed throughout its entire length. For the first 1½ hr. it was not very difficult, though laborious, and in this way the tower which stopped Messrs. Benecke and Reade in 1893 was gained. During the next 2½ hrs., however, serious difficulties were encountered; it was necessary to traverse seven towers, separated from each other by very delicate 'corniches,' to move very carefully, and to use two ropes. At 2 P.M. the summit of the Breithorn was at length attained.

The descent was made by the W. arête to the Wetterlücke, the snow being very soft, and Ried regained at 8 P.M. after 18 hrs. actual walking. On the way up the Jägi Glacier, the party studied the chain between the Breithorn and the Burstspitzen. Its highest summit rises very boldly, and is very distinctly marked off from the Breithorn as well as from the Burstspitzen, though the Siegfried map does not indicate it. The guides called this peak 'Feenkindl.' It is that named 'Klein Breithorn' by Mr. Reade, who made its first ascent on July 25, 1896 (see above).

UNTERBÄCHJOCH (c. 3,596 m. = 11,798 ft.). *September 16.*—Mr. F. A. Satow, with Joseph Gentinetta and Alois Eyer, effected this new pass over the ridge connecting the Nesthorn with the Unterbächhorn. Starting from the Oberaletsch Club hut, the party crossed the Oberaletsch Glacier, and kept at first well to the S. of the buttress which runs down to the rocks marked 2,804 m. on the Siegfried map. They then worked up through the crevasses of the glacier flowing from the Unterbächhorn, until they were able to take to that buttress near its junction with the main ridge. The face of the main ridge was gained by means of a steep snow slope, and then the party, striking straight up the rocks, reached the crest of that ridge, just below and to the S. of the point marked 3,617 m. (4 hrs. from the Club hut). They then descended the steep S.W. face of the ridge, keeping straight down the rocks until about two-thirds of the way down the wall. Then they bore to the S., crossed a rock couloir, and descended to Auf den Gändern,

reaching the waterfall in $2\frac{1}{2}$ hrs. from the new pass. Thence Mund was gained in $1\frac{1}{2}$ hr. more through the Gredetsch valley.

Albula District.

PIZ VADRET (3,226 m. = 10,585 ft.) BY THE N.W. ARÊTE. September 16.—Mr. W. Wilson Greg, with Johann Engi (of Davos), effected this new route. Starting from Davos at 4.50 A.M., the party reached, at 7.30, Dürrboden, at the head of the Dischma valley. After an hour's rest for breakfast the ascent was commenced, the W. side of the Gross Grialetsch Glacier being followed till (at 11.40) the snow saddle between the Vadret and the Piz Grialetsch was attained. After a halt for lunch the N.W. ridge of the Vadret was attacked at 12.30. It was followed conscientiously over all the towers and a great deal of rotten rock, large flakes detaching themselves on the slightest provocation, so that the greatest care was required. The snow was in fairly good condition, and the rocks warm. The summit was reached in $2\frac{1}{2}$ hrs. from the snow saddle. The return was made by the N. couloir to the Gross Grialetsch Glacier, Dürrboden being gained in $2\frac{1}{2}$ hrs. from the top, and Davos at 10 P.M. the same evening.

Dolomites.

FIRST TRAVERSE OF THE PALA DI SAN MARTINO (2,996 m. = 9,730 ft.). August 24.—This was effected by the Rev. A. G. S. Raynor and Mr. J. S. Phillimore, with Antonio Dimai (of Cortina) and Luigi Rizzi (of Campitello). Leaving San Martino at 8.45 A.M., the Passo di Ball was reached at 6.30. At 8 the party entered the great couloir which divides the Pala from the Cima Immink on the S. After following the snow for some time they took to the rock edge of the Pala and coasted up slabby and rotten rocks covered with grit. This edge grew more and more difficult and precipitous, the couloir narrowing rapidly. Several exposed traverses of great difficulty round a projecting shoulder led to the first great block-stone. From this point the couloir may fairly be called a great chimney. This chimney breast, similar to that in the Schmitt Kamin, and not less difficult, was passed at 11.15. Hence the snow was again followed, and the second block stone (about 100 ft. higher) attained. It proved impossible to turn this by climbing out and round, so that it was necessary to force (with difficulty) a passage through a small hole in the upper corner of the cave below the stone—the whole of this cave being deeply glazed. A short scramble over iced rocks and screes led to the head of the couloir, a point named Forcella Dimai. The ascent of the couloir had taken $4\frac{1}{2}$ hrs., while the danger from stones was extreme and continuous, partly from the great amount of ice and water on the upper walls of the Pala, partly from a high wind. But the couloir must apparently be raked by stones in all weathers, and the conditions of climbing make escape difficult.

From the Forcella Dimai a corresponding couloir falls away W.

towards the Passo della Scaletta, and seemed far more inaccessible than the E. couloir. But an easy route leads up a chimney directly to the summit of the Cima Immink, suggesting a more attractive future traverse, which would include that peak as well as the Pala.

From the Forcella Dimai, left at 1.35 p.m., the party struck slightly W. of the line of it. The rocks at first were very wet and of considerable difficulty, but later were good and easier. The general trend was still very slightly W. of N., and the route lay up chimneys of great length. The summit of the Pala was reached at 4.5 p.m. It was left at 4.50, and the rocks on the ordinary route cleared at 6.30. Many steps had to be cut in the ice couloir, and the rest of the way was made by the light of a lantern, San Martino being regained at 10.45 p.m.

This expedition, which is difficult, very dangerous for the first part, and continuously interesting, will be fully described in the 'Mittheilungen des D. und Oe. A. V.'

CATENACCIO FROM THE E. (9,744 ft.). August 28.—The same party made this expedition in the Rosengarten group. Leaving the Sojal hut (above Perra di Fassa) at 5.30 a.m., they took to the rocks at 6.50, choosing the most prominent of the projections at the foot. The route was at first up wet and very steeply-pitched slabs, then up an easier shallow chimney and ridges, but the whole slope was so very sheer that after several hours' climbing it was still easy to throw a stone clear on to the screes below. The general direction was slightly N.; the face of the mountain as seen from Sojal is divided perpendicularly from the foot to the upper basin by a black line of watermark, and the route taken lay always S. of this. After a halt from 8.35 to 9 the above-mentioned line was touched at 10. The party then turned southwards under a great projecting plate of yellow rock. Some 120 ft. below this, a short chimney and a stretch of much exposed face-work brought them to the chief difficulty of the entire climb—a chimney 400 ft. long and only really broken at one point 80 ft. up. But for this point it was almost perpendicular and extraordinarily uniform, the breadth being 2-3 ft., and the depth often no greater. The clamber up this chimney took from 10.45 a.m. to 1.15 p.m. Then the difficulties ended and the upper basin was reached, whence $\frac{1}{2}$ hr.'s easy climb led to the summit.

The top was left at 2.40, Gartl reached at 3.25, and Sojal at 4.28. Starting again at 5.20, Perra was gained at 6.12.

This climb is free from the danger of stone-falls, the rocks being sound and remarkable for the profusion of flowers, even within a few hundred feet of the summit. Dimai declared that the chimney was without equal in his experience for length and difficulty combined.

CRODA DA LAGO (8,805 ft.) FROM THE W. August 8.—The same party, with the substitution of Giovanni Siorpaes for Luigi Rizzi, made this ascent, following a line which probably differs from that taken by Signor Sinigaglia on occasion of the first ascent

in 1895.* The climb is interesting, and includes one chimney and traverse of conspicuous difficulty, while it gives double as much rock as the other side. It joins the 1895 route (the second route up from the E.) at the 'Scharte' on the ridge. The rocks were attacked at 10.30, the 'Scharte' gained at 12.30, left at 1, and the summit reached at 1.35. Top left at 1.45, foot gained at 2.35. Total time out from Cortina, 10 hrs. 52 min.

FIGLIO DELLA ROSETTA (2,468 m. = 8,081 ft.). *August 23.*—The party of August 24 and 28 found a new route up this point by striking up the right-hand of the two divisions in the big chimney on the W. side. This gives $1\frac{1}{2}$ hr.'s interesting rock work, and makes a pretty little afternoon's expedition. Total time out from San Martino, 5 hrs.

TOFANA DI MEZZO (3,241 m. = 10,634 ft.) FROM THE S.E. *August 24.*—Messrs. J. Stewart Mackintosh and N. Arthur Heywood, with Angelo Zangiacomì and Giuseppe Menardi, made this new route. Having gained the summit by the usual way, they started down at 11.25 A.M., and followed the S.E. arête for about 100 yards. Here they came upon a deep notch 12 ft. high, the near side of which overhung, so that they had to retrace their steps by a lower level towards the N.E., and back to the apex of the notch. From here they followed the general trend of the S.E. arête, descending easily over broad shelves thickly sprinkled with shale and boulders. About 20 min. after leaving the summit they reached a point where the arête became too steep. They then took a N.E. direction along a broad ledge for about 50 yds., descending at this point by an easy chimney curving in a S.E. direction, and so regained the S.E. arête. Descending once more over broad ledges they came to the first difficulty in the shape of a perpendicular descent, about 15 ft. deep, on which any little handhold or foothold there might be was rotten. At its base they followed another ledge, running in a N.E. direction across the face, and found, about 100 yards further on, a perpendicular groove full of ice, leading to some rough footholds 12 ft. below. Another 90 ft. below this was a ledge, the cliff overhanging it in such a way as to compel the last member of the party to rely entirely on the assistance afforded by an extra rope hitched round a staple fixed in the rock at the top of the groove. Immediately below this ledge the party descended a chimney some 100 ft. in depth, and running in a S.E. direction. This presented considerable difficulties, and was rendered somewhat unpleasant by an intermittent fall of icicles from the cliff above. (At the top of this chimney there is a convenient, jutting rock round which the last guide could hitch the rope.) Still following a S.E. direction, they descended in about $\frac{1}{2}$ hr. through fairly steep gullies to a snowfield on the S.E. side of the mountain, and thence to the moraine, reached at 3.35 P.M.

To sum up, the general trend of this route follows the S.E.

* See *Mittheilungen*, 1895, pp. 265, 276; 1896, pp. 124, 137, and *Rivista Mensile*, 1895, p. 355.

arête and its E. face. The majority of the party were of the opinion that it would be impossible to force an ascent by this route. The times taken were very slow, owing to the grave indisposition of one of the guides, by reason of bad meat supplied by a local hôtel on a previous expedition.

CENTRAL ROCK OF THE CINQUE TORRI. *August 28.*—This ascent was made by Mr. N. Arthur Heywood, with Tobias Menardi. The local guides declare that this point had not been climbed before, but this statement may very possibly be inaccurate, as the rock stands in a tempting position for any climber who finds himself in the neighbourhood of the Cinque Torri.

Starting at 11 A.M. from the base of the S.W. corner of the rock opposite the Nuvolau (alto), and after about 10 min. fairly difficult climbing on the face of the rock (bearing all the time in a N. direction), they made a short traverse towards the N. This was followed by a chimney some 15 ft. in height, which has a stone wedged on the top of it. Another traverse of 8 to 10 yds. to the N., another chimney, and some perpendicular rocks about 14 ft. in height brought them to the N. end of the summit at 11.37. The descent was made on the E. side over very easy shelves and rocks in about 9 min.

The climbing on the S.W. face is more interesting than the route up the main rock, and the climb (although not so long) is very similar to that on the route usually taken up the Croda da Lago.

NORWAY.

Jotunheim District.

THE SKAGASTÖLSTIND RIDGE.—On August 8, C. W. Patchell and H. C. Bowen, with John Vigdal, made the first traverse of this ridge from the N. [Herr Carl Hall and another member of his large party in 1894 were lowered by the rest down the unclimbable vertical face of the curtain of rock which crosses the arête between Vesle and Mellemste Skagastölstind. They then completed the traverse from the S., the remainder of their party returning via the Slingsbybræ.*] The Mellemste Skagastölstind was ascended by Hall's route from Turtegrö. The impossible rock face below Vesle Skagastölstind was turned by a very difficult chimney which starts about 6 ft. above a small platform on the E. side of the ridge, and narrows into a crack a little higher up. At the top is a large jammed stone. After this the climbing became easier, though the rocks leading to the summit of Vesle Skagastölstind are steep. From this top the descent was made by Hall's route † to Mohn's skar, and Slingsby's way followed to the top of Store Skagastölstind, which was thus crossed, the party descending by Hefty's chimney to the Skagastölshytte and Turtegrö. Time, exclusive of halts, 16 hrs.; weather wet and foggy. There is one very difficult

* *Den Norske Turistforenings Aarvog, 1896, p. 51 seqq.*

† *Ibid.* 1886, p. 64.

place on Mellemste Skagastölstind. The inclusion of Nordre Skagastölstind in this traverse would probably add little to the time. It would improve the symmetry but diminish the interest of the expedition.

Romsdal District.

MJÖLNIR* BY THE S. ARÊTE.—C. W. Patchell and H. C. Bowen, on August 31, ascended this peak by the above route, which is believed to be new. Leaving Dale at 6, the skar at the head of the Kvandalsbræ was reached in 4 hrs. From this the arête was followed closely until the foot of the great tower, so conspicuous an object from Dale, was reached. This tower was turned by a traverse on to the W. side of the mountain, and the arête was regained at the foot of the final peaks. The actual climbing from the skar to the summit of the mountain took 2 hrs. 10 min., and the descent about the same time. This is, perhaps, the finest rock climb in Norway; the arête throughout is most interesting, and the rocks extremely steep and good.

THE AAGOTTIND (5,215 ft.).—On September 5, the same party made the first ascent of this Eikisdal peak. They went from Vike sæter directly up the shoulder; leaving the shore of the lake at 8.15, the first top, on which there is a cairn, was reached at 12.30. Here the real climbing begins, and there is most interesting work for 1½ hr. along the arête to the highest point. Part of the ridge had already been climbed—by Messrs. B. Goodfellow and E. J. Woolley in 1890,† and they had built a cairn on one of the lower summits, having ascended to it from the *botn*, or *cirque*, on the E. side of the mountain. The highest point, however, appeared to be untrodden, and it is certain that the complete traverse of the ridge is new. The descent was made by the same way to the N. cairn in 1¼ hr., and Vike sæter was reached in 2 hrs. 40 min. more. This is fast time and exclusive of halts.

CENTRAL CAUCASUS.

Messrs. J. G. Cockin, H. W. Holder, and H. Woolley having travelled to Urusbieh by way of Piatigorsk and the Baksan valley, pitched their camp on August 17 near the shepherd's kosh about a mile below the end of the Adyr-su Glacier.

In order to gain acquaintance with the surrounding mountains they ascended (August 19) a snowy summit of about 12,500 ft. on the W. side of the valley, commanding a good view of the near peaks from Sullukol in the N.E. to Dongusorun in the S.W. The point reached is the last eminence to the S.E. of the Kurmuichi ridge. Time from the camp, 4½ hrs., exclusive of halts.

ADYR-SU BASHI ‡ (14,273 ft.). August 22.—Leaving the camp at 9.30 A.M. on August 21, the party crossed the grass slopes above

* Vide *Alpine Journal*, vol. xiv. p. 390 *seqq.*, vol. xvii. p. 196.

† *Den Norske Turistforenings Aarbog*, 1891. p. 23.

‡ This is the peak so named on Freshfield's map in *The Exploration of the Caucasus*.

the right bank of the Adyr-su Glacier, and gaining the right lateral moraine of its eastern arm, followed it as far as the junction of the side glacier, which descends from the W. face of Adyr-su Bashi.

Ascending first by the right moraine of this side glacier and later by the rocks on its N. side, they gained at 6 P.M. the depression (about 12,500 ft.) at the foot of the N.W. ridge of the mountain and bivouacked there. Next morning, at 5 A.M., they began the ascent of the N.W. ridge. Granite rocks, steep, but not seriously difficult, were succeeded by a short, but steep, ridge of snow in good condition. More rocks followed, and then the final snow ridge. The lower part of this ridge was very steep, covered with ice, and corniced on the N. side; but it gradually became less precipitous, and the ice gave place to snow. The summit—a short ridge crowned with rocks—was gained at 9.10, and afforded an extensive view, of which Latsga, Svetgar, and Ushba were the most striking features.

Doubtful as to the condition of the snow-slopes, and wishing to avoid falling stones encountered during the ascent, the party began at 11 A.M. to descend by the S. ridge, but soon met with a check. Returning to the summit they eventually descended by a rock gully running down the W. face of the mountain.

At first good progress was made, but lower, as other gullies converged, tedious detours were necessary to avoid falling stones, so that it was not till 5 P.M. that the glacier was reached and the line of ascent regained.

The party arrived at the camp at 8.15 P.M.

ATTEMPT TO ASCEND JAILIK BASHI. *August 25.*—Having passed the night at a height of about 11,500 ft. on a rock ridge to the N. of Freshfield's 'nameless' glacier, the same party started at 5 A.M., traversed slopes of névé to the N.W. towards Jailik, and reached Donkin's pass at 6.45.* Descending—with some difficulty—about 200 ft. on the E. side, they turned N.E., and by means of a snow couloir gained the eastern ridge of Jailik at noon.

After ascending the ridge for half an hour further progress was stopped by steep smooth rocks coated with ice.

In returning to the bivouac Donkin's pass was avoided, and time was saved by crossing a gap in the ridge higher and nearer to Jailik.

GUMACHI (13,482 ft.). *August 28.*—The same party set out at 4 A.M., crossed the grassy shoulder S.W. of the camp, and descended slightly on its S. side to the left lateral moraine of the western arm of the Adyr-su Glacier. (This glacier might be distinguished as the Gumachi Glacier.) Having ascended the moraine as far as possible, they crossed the glacier and steered southward up the névé towards the depression at the W. end of the Gumachi arête. Long detours were necessitated by several crevasses extending almost quite across the slopes. The last schrund was crossed at

* Freshfield's map and *Exploration of the Caucasus*, Appendix B, p. 20.

10.30. An hour was then spent in cutting steps up a very steep slope of hard snow, and $\frac{3}{4}$ hr. more in cutting a gap through the cornice, and at 12.30 the foot of the W. ridge of the mountain was reached. This point appeared to be easily accessible from the Leksur Glacier on the S. side of the watershed. The western arête of Gumachi is a somewhat serrated snow ridge, generally corniced on the N. side, but fringed on the S. side with rocks.

The ascent of the ridge was begun at 1 P.M., and after several projecting points had been surmounted, the summit—a roomy shelf of snow—was gained at 8 P.M. Time from the camp, $7\frac{1}{2}$ hrs., exclusive of halts. The descent was begun at 8.30, and the camp regained at 9 P.M.

ATTEMPTS TO ASCEND BSHEDUKH AND ULLUKARA.—Somewhat broken weather ensued, during which the camp was moved to the Shikildi glen, two or three hundred yards below the snout of the glacier.

On September 3 the same party ascended the Shikildi glacier for an hour; then turned eastward and went up the glacier which descends from the northern slopes of Bshedukh. After considerable delay in passing the upper ice-fall, they reached and bivouacked at a ridge of rocks which separates the head of the glacier from a long, straight ice-stream flowing northward to the Adyl-su valley.

During the night bad weather set in. Next morning an unsuccessful attempt was made to climb to the N. slopes of Bshedukh by a continuation of the rock ridge, and further operations were stopped by a series of snowstorms.

On September 7, Mr. Holder having left, Messrs. Cockin and Woolley went to the head of the Shikildi Glacier, and passed the night on rocks on its right bank. Starting next morning at 5 A.M., they ascended northward, first by rocks and then by glacier and snow slopes.

The head of the Shikildi Glacier is represented in Freshfield's map as extending northward to the foot of the W. ridge of Bshedukh; but at 8 the party reached the crest of a much lower snow-ridge branching westward from the main watershed, and separated from the Bshedukh range by a glacier which falls westward, from a depression in the watershed, towards the Shikildi Glacier. By following the snow-ridge eastward for half an hour the highest point on the main watershed between Freshfield's Chatuin-tau (Shikildi-tau) and Bshedukh was gained.

Although probably not more than 13,000 ft. in height, this summit was found to command a magnificent view of Chatuin-tau, both peaks of Ushba, and the rock towers of Little Ushba, as well as of the Leksur and Chalaat basins.

On Freshfield's map a pass is marked as connecting the Shikildi and Chalaat Glaciers; but this year there is no practicable pass directly across the intervening ridge. Probably the pass used occasionally by the natives is the above-mentioned depression in the main chain, lying between Bshedukh and the point gained by

Messrs. Cockin and Woolley. It had every appearance of being a practicable pass to the Chalaat Glacier.

September 19.—After ten days of bad weather, during which the Dongusorun pass was crossed, Messrs. Cockin and Woolley left their camp (about an hour below the end of the Leksur Glacier) and making their way up the western arm of the Leksur Glacier found a good bivouac (about 8,500 ft.) on the right bank, and just opposite to Gadil.

Next day they started at 4 A.M., crossed the glacier to the N. side, and attacked the ice-fall which descends from the main watershed along the western flank of Gadil.*

The ice-fall presenting great difficulty, and the slopes above it being greatly crevassed and covered with 12 in. or so of fresh snow, it was not till 1.30 P.M. that the main ridge was gained at a point to the E. of Ullukara. The weather then became hopelessly bad, and further progress was impracticable.

The bivouac was regained at 8 P.M., and the camp at 9 A.M. on the 21st.

These expeditions were made without guides. On the longer expeditions native porters were taken about half-way to the sleeping places, but never on snow or ice.

SIGNOR V. SELLA'S EXPEDITIONS.—Signor Vittorio Sella, accompanied by a friend, Signor Emilio Gallo, and some of his Biellese farm servants as porters, again visited the Caucasus last summer, and made an extensive journey on the N. side of the range. Starting from Vladikavkaz he crossed the Kolota Pass and climbed the second summit of Tepli. The highest peak appeared very formidable. He explored the Songuta Glacier in the Adai Khokh group, and reached a lofty peak on one of the spurs that enclose it. He then crossed from the Uruk to Balkar by the passes W. of the Bogkhobashi group, climbing on the way Sukan (14,730 ft.), its highest peak. This proved a long and difficult ascent. He crossed from Cheghem to the great Leksur Glacier by the Bashil Pass. The existence of this pass was long ago ascertained by inquiry from the Cheghem people by A. W. Moore. Mr. Mummery got into great difficulties on its N. side.† The proper native route Signor Sella found quite easy. As usual, Signor Sella has brought home a large stock of photographs. Two of his cases of photographic material were stolen at St. Nikolai, but happily returned undamaged after forty-eight hours, the thieves being apparently disappointed by the nature of their contents.

SPITSBERGEN IN 1896.

MOUNT STARASHCHIN (c. 3,500 ft.). This peak forms the south door-post to the entrance to Ice Fjord.—On June 18 Mr. E. J. Garwood landed alone about 1 P.M., and walked due S. across the

* This ice-fall is partly seen on the extreme left of the illustration facing p. 148, vol. ii. Freshfield's *Exploration of the Caucasus*.

† *Alpine Journal*, vol. xiv. p. 89.

flat, swampy shore over deep patches of snow and soft bog for about 4 miles past the north end of the narrow mountain mass of vertically-bedded Hecla Hook schistose rocks. Turned E. up steep scree, followed by steep loose rocks, and then up rottenest paper shales to the arête. Cut through small cornice. The arête was at first of hard red conglomerate and overhung to the W. He followed the narrow arête (alternate rock and snow), and then a very narrow and steep snow arête to the first peak. A corniced snow arête led to the second and highest peak. Splendid and clear view. Descended, returning over the lower peak to a knob, then W. down a rib of steep rotten rock, the couloirs being impracticable (frequent avalanches). Bore right, crossing couloirs and dodging avalanches. Lost time in returning a considerable distance over the worst part of the mountain to retrieve an object dropped. Returned over the flat to the ship. Total time, 6 hrs. No halts except for photographing.

FOX PEAK (c. 3,800 ft.). This peak lies S. of Advent Bay, on the watershed between Ice Fjord and Van Mijen's Bay.—On June 25, 6.30 P.M., Sir Martin Conway and Mr. E. J. Garwood left Cairn Camp, in Advent Vale, went S. up a side valley (Fox Valley), over two big gullies, then turned W. and climbed an easy ridge of steep débris. This narrowed to the rottenest kind of rock arête, with holes right through it, and led to the top of Bunting Bluff (c. 2,600 ft.), which was reached at 11 P.M. Hence a wide, undulating snow-field led S. Tramped across it (snow being in good condition), and thus reached a snow arête which narrowed to the top of the peak, where they arrived about 1 A.M. (26th), preceded by a fox. Brilliantly clear view, except into valleys, which were filled with cloud. Bright sunshine. Descended to Bunting Bluff, and groped another way down through dense fog.

FOX PASS (c. 2,800 ft.), E. of Fox Peak.—About 4 P.M., June 27, Sir Martin Conway and Mr. Garwood left Cairn Camp and advanced up Fox Valley to the foot of the glacier at its head. They bore to their right up the glacier, in which were many hidden crevasses, then over a bergschrund and up a snow slope to the col (7.45 P.M.). On the other side they descended Plough Glacier (whose direction is about S.W.) with great difficulty, owing to the depth and softness of the winter snow, which gave almost no support. Thus they gained the head of Dreary Valley, which leads ultimately to Van Mijen's Bay.

BOLTER PASS (c. 2,800 ft.), W. of Fox Peak.—The same party being at the head of Dreary Valley about noon (June 28), instead of turning E. to return by Fox Pass, advanced straight N. up another branch valley, and so reached the col at 1.45 P.M. Descent N. down a glacier and round a great lake and snow swamp on the ice, and then over a long ice-foot below the glacier, the whole deeply enveloped in soft and utterly rotten snow. Reached Cairn Camp about 8 P.M.

STICKY KEEP (c. 3,500 ft.), on the west side of the Sassendal, between the second and third side valleys, counting from Sassen Bay.

July 4.—The ascent is very easy, and was made by the same party.

GRIT RIDGE (c. 3,000 ft.), part of the mountain mass N. of Sticky Keep.—On July 6, 7 P.M., the same party, leaving Waterfall Camp, walked down the Sassendal past Sticky Keep, then turned up next side valley (Delta Valley), and with difficulty crossed two flooded torrents flowing between overhanging ice banks. In the second Mr. Garwood had a very narrow escape. Reached a glacier at the head of the north side valley, and crossed a col in Grit Ridge beyond it, thus gaining access to the head of a large glacier which, draining N., empties down the Sassendal's first side valley. Tried to cross the great basin at the head of this, but became involved in a maze of hidden crevasses, from which, being without a rope, they with difficulty disentangled themselves. Making a wide circuit in the soft snow, they returned and climbed a summit on Grit Ridge commanding a splendid view. Returned to Waterfall Camp by way of Delta Valley.

THE TRIDENT (c. 3,400 ft.), the mountain mass next to and S.E. of Sticky Keep. It pushes forward three prongs or bluffs towards the Sassendal.—On July 10 Mr. Garwood climbed the west prong from the S.W., descending by the N.W. On July 11 Sir Martin Conway and Mr. Garwood climbed the central prong from the col between it and the west prong. No difficulty.

PROSPECT RIDGE (c. 3,300 ft.), forming the right side of gorge of the Ivory Glacier before it opens out above Agardh's Bay.—When, at 2 A.M., July 16, the caravan with great difficulty, and chiefly owing to Mr. Garwood's exertions, had reached the foot of the Ivory Glacier, at the head of the long valley, from the west coast, Sir Martin Conway went at once to find the way eastward. Crossing with difficulty the wide, many-channelled ice-foot below the glacier, he climbed the end of a ridge overlooking its right bank, and then followed for about three miles along the crest of this ridge, in the teeth of a furious gale, to its highest point, whence there was a clear view over a vast field of inland ice, and over Agardh's Bay and Stor Fjord, to the distant Edge's Land. Reached camp about 6 A.M.

IVORY GATE.—The same day Sir Martin Conway, Dr. Gregory, and Mr. Garwood left camp about 11 P.M. and crossed the wide domed foot of the Ivory Glacier to Agardh's Bay. The only difficulty was in finding a way down the great ice-cliff at the east side.

FLOWER PASS (c. 2,500 ft.) AND PEAK (c. 3,000 ft.), apparently the next point S. of Mount Lusitania.* The pass is W. of the peak.—July 22 Sir Martin Conway and Dr. Gregory left De Geer Camp, on the shore of Ice Fjord, at 11 A.M., and mounted the Flower Valley S. behind camp to the glacier at its head, and up this to the col, thence up a debris ridge to the peak (4 P.M.). Fine view, but freezing wind. Descended straight down face of peak to the glacier, again becoming entangled without a rope amongst concealed

* *Alpine Journal*, vol. xvii. p. 310.

crevasses, into which they broke through more than once. Went down glacier and valley to camp.

BOOMING PEAK (c. 3,500 ft.), overlooking Booming Glacier, near Brent Pass, the col between Advent Vale and the Sassendal.—This was ascended on July 28 by Mr. Garwood. The route lay up a long snow arête, running S. between Booming and Baldhead glaciers.

HORN SUNDS TIND (4,560 ft.), overlooking Horn Sound, the highest measured peak in Spitsbergen.—This was climbed by Mr. Garwood, Mr. Trevor-Battye, and Ice-master Bottolfsen on August 18. The ascent was somewhat misleadingly described in the 'Times' by Mr. Trevor-Battye. Mr. Garwood led over several miles of crevassed glacier, and found the peak, which he had never seen, through a dense fog. They camped for some days at the foot, and finally made the ascent in bad weather. Mr. Garwood led the whole way and cut all the steps. He reached the long summit ridge, but could not climb the final rock-tooth, being inadequately supported by his companions. A full account of this, the most important climb of the expedition, will be published in the 'Alpine Journal.'

W. M. C.

ALPINE ACCIDENTS IN 1896.

THE past summer, though not rivalling the phenomenal season which preceded it, has, nevertheless, been far too prolific in the matter of Alpine accidents. It might have been expected that the very bad weather which prevailed in the Alps this year would have reduced the number of fatal accidents, as it certainly reduced the number of expeditions made. It is true, no doubt, that while there were in the High Alps during the fine summer of 1895 fifteen accidents, costing twenty lives (including, in addition to those tabulated by us at the time, the death of Herr Franellich, noted at the end of this article), in the bad season of 1896 we record but eight accidents (eleven lives lost). Yet even this number is far too large, and is due in part to the increasing custom of attacking peaks even when they are in bad condition. In 1896, as in 1895, there were also many fatal accidents on minor summits (Dent du Jaman, Croix de Javernaz, and many in the Eastern Alps), while among the narrow escapes none is, perhaps, more remarkable than that of a young Oxford man, who, while climbing (with guides) the Aiguilles Rouges d'Arolla, was so frightfully injured by a falling stone in a gully that at one moment the doctors gave him but twenty-four hours to live—a prophecy fortunately falsified.

Dismissing at once the Oedkarspitze accident (which happened very early in the season, and at a spot where there is usually no snow), and that on the Upper Grindelwald Glacier (which took place on what may almost be called a beaten track), the six others were due, as will be seen from the table subjoined, to one or other of two

causes—a slip on rock, or a fall through a snow cornice. Both causes were, in part, at least, due to the bad weather, which rendered the season of 1896 so wretched. Yet this bad weather should have impressed on the minds of climbers the necessity of extra caution, above all in the case of corniches. We have commented on each accident separately, and need only say here that it must always remain a profound mystery that so experienced a party as that on the Lyskamm should have, we must say, deliberately attacked a dangerous peak when in a most dangerous condition.

TABLE OF ACCIDENTS IN 1896.

Date	Name	Place	Lives lost	Cause
June 22	Otto Fellner ...	Oedkarspitze ...	1	Slip on hard snow; unroped.
August 11	R. Majoni ...	Zwölferspitze ...	1	Slip on rock.
" 15	C. H. Funk ...	Predigtstuhl ...	1	Slip on rock.
" 20	{ E. Thorant A. Payerne }	Meije ...	2	Probable slip on rock, perhaps avalanche.
" 26	G. Corra ...	Petite Sassièrè	1	Fall through snow cornice.
September 5	F. Drasch ...	Gross Mörchner	1	Slip on rock.
" 9	G. R. Betjemann	Upper Grindelwald Glacier	1	Collapse of snow-bridge.
" 10	{ Max Günther Roman Imboden P. J. Ruppen }	Lyskamm ...	3	Fall through snow cornice.

ACCIDENT ON THE OEDKARSPITZE.

ON June 22 Herren Georg and Otto Fellner, of Munich (the former an experienced climber), started at 5.30 A.M. from the Angeralm, and ascended, by way of the Marxenkar, the three peaks (highest 9,003 ft.) of the Oedkarspitze, in the Karwendel group, N. of Innsbruck. They had intended to climb also the adjacent and rather higher Birkkarspitze, but, abandoning this idea on account of a dangerous cornice on the ridge, proceeded down the Schlauchkar (then filled with snow) on their "steigeisen." They were following the tracks of a previous party when Otto slipped, flashed past his brother, and fell over a cliff about 150 ft. in height. His brother rejoined him in $\frac{1}{2}$ hr., and managed to convey him off the snowfield; but Otto soon after died from internal injuries. The two brothers were alone and without a

guide, while at the time of the accident they were not roped. From Purtscheller and Hess's 'Hochtourist in den Ostalpen,' i. p. 38, it appears that usually the Schlauchkar is a rock gorge filled with huge boulders, there being only a few patches of old snow near the opening between the Oedkarspitze and the Birkkarspitze.

ACCIDENT ON THE ZWÖLFERSPITZE.

On August 11 Dr. Rudolf Majoni, a young man of 22, and son of a high official at Innsbruck, lost his life on the summit (8,353 ft.), which rises above Neustift in the Stubai Thal, and is the end of the ridge coming from the Habicht. With his sister and another lady, but without a guide, he made the ascent, and on the descent had reached the last difficulty. This is a chimney, leading the way down which the unfortunate man slipped, turned over several times, and was found dead at the base. He seems to have struck his head almost immediately against a rock, and to have lost his consciousness at once.

ACCIDENT ON THE PREDIGTSTUHL.

On August 15 Herr C. H. Funk, of Munich, the Secretary of the Bayerland Section of the German and Austrian Alpine Club, and a rock climber of great experience, was killed on the Predigtstuhl (8,850 ft.), in the Niedere Tauern range. Accompanied only by a friend, he had reached the most difficult part of the ascent, a rock-step at the upper end of a steep rock chimney about 100 ft. below the summit. His friend, who was leading, could not manage to get up this bit, whereupon Herr Funk tried a way to the right which seemed to him easier; but he had hardly got up 10 ft. when he lost his hold, and was precipitated some 650 ft. through the chimney to the Griesenerkar below. It was only after four days' strenuous labour that the body was recovered and brought down. The two friends were not roped on this ascent, which is described by Purtscheller and Hess, 'Hochtourist in den Ostalpen,' ii. p. 156, as not a difficult climb.

ACCIDENT ON THE MEIJE.

On August 20 two French climbers, MM. E. Thorant and A. Payerne, of Grenoble, perished near the foot of this peak. The following account is abridged from a very detailed narrative, which has been courteously placed at our disposal by Mr. Stutfield, who took a prominent part in organising the rescue party:—On the night of August 18 four parties found themselves at the Châtelleret Club hut. Of these Messrs. Stutfield and Spencer had that day climbed the Meije, and two other English parties proposed to do the same on the morrow, while the two French climbers had

arrived (accompanied by their wives, Madame Thorant being, we believe, the first lady who ever ascended the Meije) from La Grave over the Brèche de la Meije. Next morning the French ladies returned to La Grave by the Col du Clot des Cavales, while the two English and one French caravans set out for the Meije, the French climbers being without guides. They were passed on the 'Promontoire' by the English parties, and again on the descent, the French gentlemen then stating that they proposed to pass the night on the rocks near the foot of the Glacier Carré. They were seen from La Grave on the summit at about 2.30 P.M., and later in the evening from the S. side on or near the Glacier Carré. The weather had been fine during the day, though it grew dull and threatening towards evening; but rain was falling (no doubt snow above) on the morning of the 20th. As the French climbers had not arrived, Messrs. Stutfield and Spencer, with a number of Swiss and Dauphiné guides, set out in order to render aid if required. Two of the Dauphiné men went ahead and found the bodies at the foot of the 'Grand Couloir' descending W. from the 'Pyramide Duhamel,' and returned with the news to the rest. Mr. Spencer, however, thought it better to go up himself in case the Frenchmen were not dead, but found the bodies already stiff and cold. Mr. Stutfield meanwhile descended to La Béarde, and gave the alarm. Next day, after some delay, owing to opposition by the local authorities on formal grounds, a large party of gentlemen and guides went up and, with the aid of a party of villagers which arrived later, brought the bodies down to La Béarde. We give here Mr. Stutfield's exact words:—'The body of M. Payerne was lying face downwards in the snow; that of M. Thorant hung on the rope, which was unbroken, in the crevasse between the rock and the ice, and we had some difficulty in extricating it. Their hats, gloves, one boot torn from M. Payerne's foot, a crampon, and other articles littered the snow, but the axes were not to be found. Both had sustained severe injuries on the head, and it is satisfactory to know that death must have been instantaneous. Curiously enough, M. Payerne's watch was still going; that of M. Thorant had stopped at 7.45. It went on again, however, on being shaken, and I do not think this can have been the hour of the accident, as there was no snow on either of the bodies when they were found.'

Assuming that the two unfortunate climbers carried out their expressed intention of sleeping near the foot of the Glacier Carré, they must, on the morning of the 20th, have descended the great rock wall which constitutes the chief difficulty of this expedition. Thence the way is much easier, and it would seem that they were within a few yards of safety (namely, the Etançons Glacier) when the mishap took place. How precisely this occurred will never be known with certainty. Perhaps one of them was exhausted by the long descent in bad weather and slipped; perhaps a small snow avalanche in the couloir carried them off their feet. But when it is asserted (as has been the case) that their undertaking was a very

rash one, it ought, in fairness to those who can no longer speak for themselves, to be remembered that they had alone practically accomplished the ascent and descent (under unfavourable circumstances) of one of the most difficult mountains in the Alps, and perished just as their climb was about to be crowned by success.

M. Thorant was buried (without any religious ceremony) by his own formal desire, several times expressed, in the *commune* wherein he met his end, and now rests by the side of another victim of the Meije, Dr. Emil Zsigmondy, close to the little churchyard of St. Christophe. He was only 40 years of age, and a bold and experienced climber, though he preferred to go alone. Witness his solitary ascent of the S. Aiguille d'Arves, and his traverse in very fast time of the three peaks of Belledonne. He was the founder (in 1895) and President of the 'Rocher Club,' of Grenoble, formed to encourage the guideless climbing of rock peaks. M. Payerne was rather older, and a professor at the Lycée, of Grenoble. Contrary to what has been stated he was a good and experienced climber, and had done much good work for the 'Société des Touristes du Dauphiné,' first as assistant secretary, then as librarian. He was buried at Grenoble, over 6,000 persons being present at the funeral, as we learn from one who was there. It is pleasant to read in the French papers the warm expression of thanks to Mr. Stutfield, Mr. Spencer, and all other foreign gentlemen and guides, who exerted themselves with true courtesy to do their utmost for their unfortunate comrades in arms.

W. A. B. C.

ACCIDENT ON THE PETITE SASSIÈRE.

ON August 26, Signor G. Corra, one of the most active members of the Italian Alpine Club, lost his life on or near this very easy peak (12,051 ft.), which rises just to the N. of the Aiguille de la Grande Sassièrè in the Tarentaise. Accompanied by G. B. Pellissier and Cæsar Meynet, both of Val Tournanche, he had started early that morning from the hamlet of Fornet at the head of the Val Grisanche, and had effected (it is said very quickly) the ascent of the Grande Sassièrè apparently by the S.E. arête, a route discovered in 1878 by Messrs. Coolidge and Yeld.* The party then descended by the N. arête, but it is not quite clear from the published accounts in the 'Rivista Mensile' whether they had got much beyond the depression between the two peaks, or had actually gained the summit of the Petite Sassièrè itself, though the latter seems most probable.† Somewhere on this ridge a snow corniche broke under their feet, and all three fell down the Italian

* *Alpine Journal*, vol. ix. pp. 101-2.

† The traverse from one peak to the other offers not the slightest difficulty, and was first effected in 1889 by Signor G. Bobba, who took only 50 min. *Bollettino del C. A. I.*, 1890, pp. 79, 80. *Alpine Journal*, vol. xiv. pp. 493-4.

slope. The rope soon broke, and Meynet was left behind, his two comrades being carried some 300 ft. lower. Both guides were injured, but Signor Corra had sustained such wounds in his head that in about 10 mins. after the fall was checked he had ceased to live. The guides went down to the highest hamlet in the Val Grisanche and reported this sad accident. That night a search party was sent out, which next day discovered the body, 'almost covered with snow and frozen, about 650 ft. below, or to the E. of, the summit of the Petite Sassièrè, in other words, just opposite the Col de Bassac déré.'* It was transported down to the valley, and later to Turin, where Signor Corra resided.

The surviving guides declare that the snow was in very bad condition, while the weather was bad, the clouds thick (so that they could scarcely see each other, though tied close together, as the rope was too short), and the wind very strong. These things being so, it is most likely that the party kept too much on the crest of the ridge, instead of on the easier French slope, and not being able to see the corniche fell, as might be expected, when they trod upon it.†

W. A. B. C.

ACCIDENT ON THE GROSS MÖRCHNER.

ON September 5 Dr. Fritz Drasch, of Graz, one of the best and most experienced of the present generation of Austrian mountaineers, perished in rather a singular fashion on this peak (10,785 feet), one of the Zillerthal group. We summarise here the very detailed account by his companion, Herr Sirk, which is printed in No. 18, 1896, pp. 221-2, of the 'Mittheilungen' of the German and Austrian Alpine Club, while we avoid any expression of opinion as to the heated controversy which has arisen with regard to the acts of a German climber and his guide, who climbed the peak the same day. For a long time Dr. Drasch had entertained the idea of ascending the Gross Mörchner from the N.E., starting from the Greizer Club hut at the head of the Floienthal. A steep ice-gully descends from the summit, and is limited on either side by a rock ridge, the right-hand one of which (looking from the Club hut) was that up which Dr. Drasch proposed to clamber. With his friend, Herr Sirk, he slept with this intention at the hut on the night of September 4. A German climber and his guide were also there, and started next morning half an hour before Dr. Drasch and Herr Sirk. When the latter reached the foot of the mountain they found that the others had ascended by the right-hand ridge, and therefore, to avoid the stones dislodged from above by them, attacked, but with a certain hesitation, the left-hand ridge, which was known to be the

* *Rivista Mensile*, Sept. 1896, p. 392.

† For further details see the official and authorised accounts published in the August and September numbers of the *Rivista*, pp. 350, 391. The poor illustration at p. 75 of the 1890 *Bollettino* shows the slope down which the fall took place.

more difficult of the two. The ascent proved as difficult as was feared.

The two friends had reached the upper third of the mountain, when it became necessary for Dr. Drasch to climb over a great boulder, Herr Sirk remaining behind this rock and wedging the rope in between the boulder and the rock. Dr. Drasch had his end of the rope securely fastened round his body, while he carried three or four lengths of the rope across his chest and one shoulder. Herr Sirk could now see nothing of what his friend was doing, but felt the rope tighten then slacken, according as Dr. Drasch advanced or retreated. Suddenly, however, without hearing any cry or other noise, Herr Sirk felt a terrific jerk of the rope, which forced his left hand against the rock and injured it. As he received no answer to his repeated shouts, he managed to get on to the top of the boulder, and there saw his unfortunate friend hanging at the end of the rope. Herr Sirk, with a whistle, gave the 'Alpine Distress Signal,' in hopes that the other party, then on the summit, might hear it, but in vain. With great difficulty he succeeded in descending to Dr. Drasch. He tried to revive him by rubbing with cognac and snow, but efforts were fruitless. He then managed to get down the dangerous ice gully somehow (as his injured hand did not allow him to climb rocks), and reached Ginzling that night, but owing to the weather it was only two days later that a strong party of guides succeeded in bringing down Dr. Drasch's body. Herr Sirk (who is a member of the medical profession) states that when he reached Dr. Drasch both his heart and pulse had ceased to beat. He had fallen twice the length of the free rope, or between 80 and 95 ft. Death was due to the terrific jerk, which caused internal injuries, and *not* (as was at first believed) to one of the coils of the rope having got round his neck and throttled him. This latter point was made clear when it was later discovered on carefully examining the body that the rope across his chest had only bent his head on one side. Dr. Drasch was but thirty-nine years of age, but had been a climber for eighteen years, having often been with Herr Purtscheller, who has written a touching notice of his lost comrade.

Most probably a slip on the rock was the cause of this sad accident, but possibly the handhold may have suddenly given way. As Herr Sirk heard no cry, it is pretty certain that the mishap proved fatal at once. It is also said that the mountain was in bad condition that day, while Dr. Drasch was rather excited by the fact of another party having taken his intended route, and so was inclined to hurry and to force bad bits, which he might have hesitated to try when in a calmer frame of mind.

ACCIDENT ON THE UPPER GRINDELWALD GLACIER.

ON September 9 Mr. Gilbert Richard Betjemann (a young man of thirty-one, who was a violinist at the Opera in London, his father

being leader of the orchestra there) was killed on this glacier. He left Grindelwald in the morning with Rudolf Bernet (said to be a young and inexperienced guide) to make the excursion to the Gleckstein Club hut and back. They took the ordinary route by the Milchbach chalet, and had reached the right edge of the glacier when the accident took place. The following account is mainly taken from that published in the 'Revue Alpine' (of Lyons), 1896, p. 302, by Mr. Andreas Fischer, one of the teachers at the Grindelwald Secondary School, who was one of the first persons on the spot after the accident occurred. In order to gain the rocks on the right bank of the glacier it was necessary to cross a snow-bridge of avalanche snow, which had been used all the summer and safely traversed that very morning by another party. Bernet, however, seems to have had his doubts as to its solidity, and bidding Mr. Betjemann remain on the ice, proceeded himself cautiously on to the bridge. But it gave way under his weight, and he fell some distance into the chasm thus caused. He was hurt considerably, but after recovering himself was able with some difficulty to climb out on to the ice. To his surprise Mr. Betjemann was not there, and getting no response to his repeated shouts he concluded that his employer had probably run back in search of help. (Most likely he had been stunned by his fall, and imagined that a longer time had elapsed since the accident than was really the case.) He therefore started back, but at the chalet ascertained that Mr. Betjemann had not arrived there. Joined by Mr. Fischer, who happened to be on the spot, and by two other guides, who were on their way down the Wetterhorn, he returned to the scene of the accident. Crossing the snow-bridge further to the left, the party soon caught sight of the unfortunate traveller, who was lying on the rocks after a fall of 15 to 20 ft. He was still breathing, but after he had with some difficulty been taken out of the chasm soon passed away, despite all efforts to preserve his life. The body was carried down to Grindelwald that night. We are informed that the local doctor who was called in to certify the cause of death was of opinion that the gentleman was far less hurt than his guide, but that he perished through suffocation, owing to the mass of snow and ice which had fallen on his face and chest. It is obvious that this accident belongs to the class of those which will happen despite all care, and was the purest mishap. The two were not roped together, but the glacier at that point is so easy that it is not at all usual to rope while crossing it.

ACCIDENT ON THE LYSKAMM.

THE most terrible accident of the past season was that in which Dr. Max Günther (to whose projected journey to the Sikhim Himalayas in 1897 allusion was made in our last number), with his guides, Roman Imboden and Peter Joseph Ruppen, perished by a fall through a corniche on the E. arête of the Lyskamm. The

printed accounts state that the spot was precisely the same as that on which two English climbers, with the three brothers Knubel, lost their lives in 1877. But we are informed in a letter from Joseph Imboden (father of Roman) that the accident took place not on the 'grande corniche,' but on a minor one, presumably nearer the Lysjoch.

On September 8, Dr. Günther's party slept in the new Bétémps Club hut, at the foot of Monte Rosa. Here they met Herr Spinner, of Aarau, and his guide, Zuber, who were contemplating the ascent of Monte Rosa. The weather on the 9th was thoroughly bad. During the day Dr. Günther invited Herr Spinner to join his own party, at any rate as far as the Lysjoch, whence they could continue the ascent or not as they felt inclined. The united parties accordingly left the hut at 4 A.M. on the morning of the 10th. Though the sky was quite clear, a warm S. wind was blowing, and the snow was so soft as to make the ascent exceedingly laborious. They reached the Lysjoch at 9 A.M., and as Herr Spinner did not wish (according to his statement in the November 'Alpina,' p. 138) to continue the ascent, he made a rendezvous at that spot for 3 or 4 hrs. later with Dr. Günther's party, and proceeded with his guide towards the Ludwigshöhe, which he had some idea of climbing. He could thus watch the other party on its way up the Lyskamm, which would have been impossible from the Lysjoch itself (*ibid.*). At 10.30 Zuber, who had been watching the progress of the others (rendered slow by the state of the snow), heard the roar of an avalanche, and saw a cloud of snow blowing from the E. ridge of the Lyskamm. He at once feared that an accident had happened, and being joined by the caretakers of the Capanna Margherita on the Signal Kuppe (who had also seen this cloud and the fall), the four proceeded to a point whence the three bodies could be seen lying on the snow at the base of a precipice of about 1,500 ft. in height. Zuber and his employer at once descended to the Riffelalp, one or both of the Italians going down on the Italian side to give the alarm. Search parties at once set out from either side. The Swiss found by the bodies a party of ten Italians, who had come up earlier, and who helped to convey the bodies as far as the Lysjoch, whence they were brought down to Zermatt on the evening of the 11th. Each of the victims had received injuries which must have been instantly fatal; but, while it is satisfactory to know that none of them died a lingering death, there is considerable reason for supposing that they did not fall simultaneously. The hole in the corniche, which was clearly visible from below, was singularly small and well defined, thus negating the supposition that they all three fell together. The bodies of the two guides lay prostrate on the snow, but that of Dr. Günther occupied a sitting posture, and presented the following peculiarities: The coat was turned up firmly over the head, while the right arm was stretched upwards, the shoulder being dislocated, and the hand firmly clenched. From these and sundry minor indications it has been argued that Imboden, who

was leading, must have suddenly disappeared through the cornice, that Dr. Günther must have struck his axe into the snow, and held on to it firmly with one hand while he was being pulled feet first through the rotten eave of snow, and that Ruppen must have been jerked from whatever position he was in by the fall of the second man. The rope was broken between each of the bodies, while of the three ice axes only the iron head of one was found. The 'Alpina' November number, p. 129, announces that neither guide had insured his life according to the scheme arranged by the Swiss Alpine Club, while we are informed that Ruppen leaves a young widow and six children in great poverty. When dealing with the Lyskamm accident of 1877 we wrote* :—'Even the best guides have a tendency to underestimate an invisible danger on well-known ground. Moreover, a leader and step-cutter has special temptations to keep near the crest of the mountains, where he finds the slope less steep than a yard or two lower down, and the foothold often snow in place of hard ice.' These words need only to be supplemented by the fact that in 1896 the S. wind had made the snow and ice so rotten that even in the forenoon the party did not dare to skirt on the N. face for fear of starting avalanches, to explain why Dr. Günther's party lost their lives. We are compelled, taking all these points into consideration, to express our utter amazement that a party of experienced mountaineers should have even thought of trying under such conditions a mountain so notorious for its dangerous corniches as the Lyskamm.

ACCIDENT IN THE URI ROTHSTOCK GROUP.

It seems best to chronicle here an accident which occurred towards the end of November 1895, though but little is known about it. On November 23, Herr Julius Franellich, of Trieste, a young man of twenty-four years of age, and a student at the Federal Polytechnic School in Zürich, left Zürich, slept that night at the Krönte Club hut, at the head of the Erstfeld valley, and next day, alone, effected the ascent of the Gross Spannort. He descended that afternoon to Engelberg, where he arrived between 3 and 4 P.M., but made no stay, inquiring the way to the Plankenalp Club hut, for which he started alone at once, as he proposed to cross the Uri Rothstock the next day to Isenthal. Since that time no traces have been found of the unfortunate traveller. As he did not return to Zürich by the 27th, his friends searched nearly the whole range of the Uri Rothstock, but in vain. There was no certain trace of his having been in the Club hut, or on the summit of the Uri Rothstock, or in any of the chalets in the Grossthal and Kleintal, which descend from the peak to the hamlet of Isenthal. His fate, therefore, must remain a matter of conjecture. Some think that he fell over the steep rocks at the head of the Horbisthal,

* *Alpine Journal*, vol. viii. p. 349.

as darkness would have overtaken him before reaching the Club hut; others are of opinion that he fell into a crevasse on the Blümlisalpfirn, below the peak. A full account of the search is given in No. 8, 1896, pp. 81-3 of the 'Alpina,' the organ of the Swiss Alpine Club. In the January number of the same paper (p. 10) it is stated that Herr Franellich had climbed Mont Blanc, the Matterhorn, &c., without guides. But that is quite a different thing from venturing to climb *alone* in the early winter, perhaps on glaciers which are not in themselves difficult, but at that season very treacherous. Solitary climbing has thus claimed yet another victim.

At the beginning of last October it was stated in the Austrian Parliament by one of the members that since 1889 there have taken place on the Raxalp no fewer than thirty-seven fatal accidents, while eleven persons were severely hurt; of this number of accidents twenty-seven and three respectively took place in 1896. The Raxalp (highest point 6,591 ft.) is a favourite resort of holiday-makers from Vienna. Bädeler describes it as a plateau (whereon are many hay huts and an inn) with steeply-sloping sides, up which tracks have been made. It would thus appear that it is not the High Alps only which are the scene of fatal accidents among the mountains, and newspaper writers would do well to bear this in mind when penning sensational articles for popular consumption.

ALPINE NOTES.

NOTES FROM COGNE.—It would seem that the Herbetet is often struck by lightning, for when I climbed this attractive peak, on July 25 this year, my guides, Albert and Benedikt Supersaxo, of Saas, who, with Mr. F. W. Oliver, made the first ascent by the S. arête on September 20, 1895, were surprised to find that nothing was left of the cairn that they had on that occasion rebuilt upon the summit.* Perhaps the disappearance of the pinnacle which played a prominent part in the first ascent of the Grivola in 1859† may be due to the same cause. I have often thought it would be interesting if a record of some prominent and familiar summit could be kept, and the changes in its shape noted from year to year. In default of a sketch or photograph a short verbal description might suffice; and I hereby make my contribution to the subject. 'On July 18, 1896, the summit of the Grivola was a delicate crest of snow, some 10 yards long, highest at the E. end, where it culminated in a fine three-sided point. This crest of snow was about 4 ft. high on the S.E. side, resting on rock.' Perhaps some one

* *Alpine Journal*, vol. xviii. p. 94.

† *P., P., G.* vol. iii. p. 336.

who visited the summit later in the season will record what he observed.

Visitors to Cogne often complain of the discomforts of the Pousset and Herbetet huts, but there is surely no need to sleep out either for the Grivola or Herbetet. Leaving Cogne at 2.15 A.M. in brilliant moonlight, and crossing the E. arête low down in passing from the Herbetet Glacier to the Dzasset Glacier, we easily reached the Col Bonney at 8.30, in 10 min. less than 6 hrs. of actual going. From Col Bonney to the summit, by the S. arête, took us just 2½ hrs., of which 15 min. were spent by the guides in pulling down the cairn they had built last year on the 'Grosser Thurm,' and rebuilding it a few feet further south, in a position where it is better seen from the summit, for it appears that the local guides and *gardes-chasse* are disinclined to believe that this arête has ever been climbed. The weather was perfect, and we basked on the summit for more than an hour, and then came down the eastern arête. (Time from the summit to Herbetet Glacier, 1 hr. 40 min.) I must confess that, with the exception of the traverse on the E. side of the 'Grosser Thurm'—along which a bouquetin or chamois had preceded us—and the short pitch near the summit, so graphically described in the paper above referred to,* I thought the S. arête distinctly easier than the eastern. The two together form a delightful expedition. (Time, excluding halts, from Cogne to the summit by Col Bonney and S. arête, 7 hrs. 50 min.; and from summit to Cogne by eastern arête, 4 hrs. 35 min.) The guides assured me that on the S. arête we followed precisely the route that they had discovered with Mr. F. W. Oliver in September 1895.

On a less perfect day we ascended Punta Lavina by the N. arête, which seems the obvious course to take from Cogne, descending by the W. face and Lavina Glacier. I counted seven species of flowering plants in bloom on the rocks just below the N. summit (10,799 ft.). A few days earlier I had noticed *Saxifraga oppositifolia* growing luxuriantly on the rocks quite half-way up the S.E. face of the Grivola, and therefore not less than 12,000 ft. above sea level. I never found it at such a height before; and a passage in Mr. Freshfield's 'Exploration of the Caucasus' † makes me think that the fact may be worth recording. There is certainly no need to sleep out for the Punta Lavina, for, though we only left Cogne at 6 A.M., being doubtful of the weather, we easily reached the S. (and highest) summit before 12.30, having spent fully an hour in halts and watching a great herd of chamois. At the King's hunting lodge in Cogne I saw five skulls of bouquetins, with skin and hair attached, that had been found this year among avalanche *débris*. The mortality from this cause must be considerable, for the Cogne valley, where these heads were found, is only a part of the district they inhabit. Nor can I understand why bouquetins should suffer more from this cause than chamois.

J. S. MASTERMAN.

* *Alpine Journal*, vol. xviii. pp. 93-4.

† *Exploration of the Caucasus*, vol. i. p. 43.

A PRÉSENT TO CHRISTIAN ALMER.—We are asked to state that it is proposed by some of his friends to make a present of a sum of money to old Christian Almer on his golden wedding. A certain sum has already been subscribed, and any further contributions will be received by the Assistant-Secretary, at the Club Rooms, and acknowledged in these columns. The list will be closed at Christmas.

LIBRARY.—The Honorary Librarian has to thank those members who have sent him for the Club set copies of the 'Journal,' in covers as issued, in response to the notice in the last number. The parts still wanting are, 21, 32, 33, 35-37, 63, 64, 67, 78, 79.

WILDSTRUBEL DISTRICT.—THE DAUBENJOCH.—This pass (about 2,900 m.) affords the most direct communication between Montana and the Gemmi. From the Hôtel du Parc, Montana, proceed N.E. through pastures and forest, and cross the Sinièse torrent at a point a little N.W. of the chalets of Plumagy, where it receives a 'bisse' (shown by a blue line on the Swiss map) which, deriving its water from the Raspille torrent near the chalets of Nousey, winds round the slopes of the Petit Mont Bonvin, just below the Plateau de Mont Tubang. Follow the course of the 'bisse' to near Nousey, where cross the Raspille by a bridge and take a herdsman's track, ascending E. to the opening of the Varneralp. Skirt this N. to where the stream issues from the Varnerkumme; follow the stream, and afterwards climb easy shale slopes to the ridge (about 2,600 m.) between the Trubelstock and Zayettazhorn. An easy descent down snow and shale slopes leads to the Trubeln, a curious circular basin well worth visiting, lying between the Zayettazhorn, Trubelstock, Schwartzhorn, Daubenhorn, and Loshörner. Ascend shale slopes N.E. to the joch (about 2,900 m.) between the Daubenhorn and the slightly higher, but unnamed, point marked 2,981 on the Swiss map. Descend N. by easy slopes of snow and shale to the Lämmernboden, whence follow the S. bank of the stream to the Gemmi (H. Wildstrubel).

Time about 8 hrs.*

THE LARSCHITRITT.—This pass (about 2,600 m.) is the most direct route between Montana and Leukerbad. From the Hôtel du Parc, Montana, proceed as in previous route to the Trubeln, whence descend S.E. by steep grass slopes, upon which in the summer months a few goats obtain a precarious subsistence. These slopes terminate in rocks of the usual Gemmi type, near the falls of a torrent which descends S.E. from the point marked 2,486 on the Swiss map. At the lowest edge of the grass slopes a rock 'traverse,' and two or three steps cut by the goatherds in the face of the rock, give access to some steep slopes and easy rocks, by

* The Daubenjoch can be conveniently taken from the Gemmi to Sierre by quitting the Montana route a little S. of Nousey, and thence following the path leading S. through Miège. Time about 7 hrs. If it is desired to reach Souste or Salgesch, the Varneralp should be traversed S.E. to the chalets of Keller, and the path thence taken to Varen, near Leuk.

means of which the apparently impracticable cliff is turned. The route then doubles N.E. under the foot of the cliff, and soon afterwards descends a second cliff by a very steep but short grass couloir, about 100 yards S. of the torrent descending from the Daubenjoch. Cross the torrent and strike herdsman's tracks leading by a series of grass terraces to Füss, and thence into the old Gemmi mule road.

Time between Montana and Leukerbad from 7 to 8 hrs.

The Larschtritt route is easier to find if taken from Leukerbad, and can be traced with the help of a field-glass from the road between Leukerbad and 'the ladders.' Taken from above, it might be difficult to strike the two points where, only, the cliffs can be descended.

The pass offers a convenient variation of the ordinary route between Leukerbad and Sierre.

On August 31, 1896, Mr. F. Corbett and Mr. W. H. C. Salmon visited the Trubeln from Montana; and on September 15, 1896, they, accompanied by A. Vocat, of Sierre, ascended the Larschtritt from Leukerbad to the Trubeln, and thence crossed the Daubenjoch to the Gemmi. Neither of the routes above described appeared to be known to the guides of Sierre or Leukerbad.

These passes, in combination with the Col des Audannes* from Montana to Zanfleuron, and the route thence by Cleuson, la Passière, and the Pas de Cheville, afford a convenient route between the Gemmi district and Bex, with good resting-places at Montana, Zanfleuron, and Gryon.

FREDERICK CORBETT.

CHANTON FUND.—We are requested to state that a fund is being collected for the guide Joseph Marie Chanton (or Schanton), of Mattsand, near St. Niklaus. Chanton was very badly hurt last winter while hauling wood from the forest. At present he can only walk slowly with a limp. He is forty years of age, and has a wife and six children dependent on him. Subscriptions (cheques and money orders to be crossed 'Messrs. Woodbridge & Co., Chanton Fund') will be gladly received and acknowledged by the Rev. Francis J. Tuck, Eton College, Windsor.

MR. FITZGERALD'S EXPEDITION TO THE CHILIAN ANDES.—We borrow the following note from the 'Geographical Journal':—'Mr. E. A. FitzGerald, who recently returned to England from his expedition in the New Zealand Alps, has started on a fresh journey, the main object of which is the ascent of Aconcagua, the highest summit of the Andes. The expedition consists of ten persons in all—Mr. Vine, geologist; Mr. de Trafford, surveyor; Mr. Philip Gosse, naturalist; and Mr. FitzGerald, with guides [Mattias Zurbriggen], and servants. From Buenos Ayres the party will proceed by railway to Mendoza. Here they will commence the ascent of the mountains, making direct for Aconcagua, and afterwards for the side valleys of the Andes. The objects of the expedition are scientific, and the ascent of the mountain will be made in a leisurely

* *Alpine Journal*, vol. xvii. p. 599.

manner. Mr. FitzGerald's object is to watch the effect of the various altitudes on the system, and from this to see whether it is possible to climb higher peaks in the Himalayas.'

REVIEWS AND NOTICES.

Ice-work, Present and Past, by T. G. Bonney, D.Sc., LL.D., F.R.S., F.S.A., F.G.S., Professor of Geology at University College, London, Fellow of St. John's College, Cambridge, and Hon. Canon of Manchester. London: Kegan Paul, Trench, Trübner & Co. (Limited), 1896. (295 pp. 24 illustrations.)

PROFESSOR BONNEY'S latest work is peculiarly valuable as presenting in clear and not needlessly technical language the ripe judgment of one specially qualified, both as an eminent geologist and an accomplished mountaineer, to pronounce an opinion on the subjects dealt with. If, indeed, the trumpet at times gives an uncertain sound on some of the numerous vexed questions connected with the formation of the Boulder Clays, the causes of Glacial Eras, &c., this is more than compensated for by a caution, and fairness, and confession of inability to speak the last word on many points, which add to the value of the author's judgment when—as in dealing with the subject of the agency of glaciers—he distinctly ranges himself in the ranks of those who, whilst admitting their abrasive power, deny their erosive action as a main factor in valley formation.

Beginning with 'Existing Evidences of Ice-work' we have two full and masterly chapters on 'Alpine Glaciers, Past and Present,' and 'Arctic and Antarctic Ice-sheets,' which will probably appeal specially to those familiar with the facts, and, therefore, to the readers of the 'Alpine Journal,' giving as they do a very interesting summary of the data, interspersed with allusions which relieve the mass of details from dryness. Commenting, for instance, on 'blocs perchés' he says 'most invaders set up monuments to commemorate their advance; the ice-king makes them memorials of his retreat.' Speaking of the valley of the Aar, he writes (p. 15), 'The dominant outlines of the valley are those indicative of the action of water, for it is V-shaped in section. It has been filled with ice, it has been modified by ice, but it has been blocked out by running water and the ordinary atmospheric forces. No one accustomed to travel in non-glaciated, as well as in glaciated regions can fail to decipher the familiar characters of ordinary rain and river action, though these are sometimes blurred by the palimpsest writing of the ice-scribe.' He subsequently (p. 21) quotes (from Heim) a calculation by Professor Helland, that all the glaciers of the Jostedal only remove annually a layer 0.008 inch in thickness from the entire surface beneath the ice, and from this a considerable part must be deducted as being derived 'from the stones which help in the work, or washed down by glacier streams from the surface of the ice, or swept beneath it as débris by lateral torrents.'

The following summary (p. 25) embodies the results of the observations on glaciers—(1) 'That, in glaciers of moderate size, such as those of the Alps, the amount of ground moraine is small, not only in comparison with that transported on the surface, but also absolutely; (2) that the ice, even under apparently favourable circumstances, though it may act as an *abrasive* agent, has practically no power to excavate; and (3) that its movements, whatever be the explanation, resemble those of an imperfect fluid.'

The succeeding chapter on 'Arctic and Antarctic Ice-sheets' opens with the remark (p. 38) that 'Land-ice has left its marks on the alpine region, but in Greenland it is still in possession. The Glacial Epoch belongs to the past in the one, to the present in the other. Every process which has sculptured the surface and formed the glacial deposits of lands wherein a milder climate now prevails, should be found at work in Greenland and the adjacent parts of the arctic region. Here the results which, in more southern countries, are subjects for conjecture, should be actual matters of fact.' Then follows a very clear and interesting résumé of the most recent and accurate information on the conditions accompanying glaciation in high latitudes, from which Professor Bonney draws conclusions (p. 65), of which it may suffice to quote the first—'Certain conditions must exist before an ice-sheet can be formed. These are (a) a climate so severe that the mean annual temperature is below 32°; (b) a fair, if not a considerable amount of precipitation, chiefly in the form of snow; and (c) a large land area to act as a gathering ground.' It is pointed out (p. 67) that 'a great accumulation of ice may be the result of moderate precipitation with a very low temperature, or of a large snowfall with a somewhat milder climate.' The chapter concludes with an account by Mr. Russell of the huge Malaspina glacier in the Mount St. Elias group in Alaska, covering an area of 1,500 square miles. In one part of this vast accumulation of ice 'the forest covering the greater portion (p. 73) of the lowlands extends up over the moraine-covered bluff of ice, and thence inland on the surface of the glacier for four or five miles. The face of the ice-bluff is so covered with boulders, earth, and vegetation; that it is seldom one has so much as a glimpse of the ice beneath.'

Part II. is entitled 'Traces of the Glacial Epoch,' and its first chapter deals with the much disputed question of 'Lake-basins and their connection with glaciers,' the 'Parallel roads of Glen Roy,' &c. The arguments on the part played by glaciers in the excavation of rock-basins are very fairly and fully stated, and the case for the opponents of this view, based on the non-erosive character of existing ice-streams, is strengthened by a reference to the fact that 'of two important valleys in the Alps, one has a lake and the other has not; in one mountain-chain lakes are comparatively frequent, in another very rare, if not altogether wanting—as, for instance, in the Himalayas, the Caucasus, and the Pyrenees.' Those who do not accept what may be called Professor Ramsay's theory hold that the phenomena of lakes may be satisfactorily explained by attributing the larger lake basins to differential movements of the earth's

crust, a view which receives valuable confirmation from some remarkable facts connected with the great lakes of North America (p. 92), where various elevated beaches are found, and, as in the case of Ontario, vary in height at different points from 368 ft. at the W. end to 972 ft. to the N.E., thus showing differential 'uplifts' or 'warpings' of a very extensive character which would account for the barrier requisite to constitute the water basin. Professor Bonney admits (p. 94) that 'the controversy is far from being decided,' but perhaps its present state may be not unfairly summed up as follows:—'The frequent coincidence of lake-basins and glaciated regions is favourable to the one hypothesis, while the direct evidence generally is adverse to the excavatory action of ice, except under very special circumstances, and in some cases it accords better with the other hypothesis.'

Next follows (p. 94) a very interesting description of the various theories on the formation of the parallel roads of Glen Roy, none of which seem to avoid all the difficulties of the problem 'which (p. 107) is likely to remain, for the present, among the controversial questions of geology.'

In the second chapter of Part II. the subject of the origin and distribution of the English boulder clays and 'streams' of erratics is discussed in considerable detail; but (p. 163), though 'there is general agreement as to the majority of the facts stated, the greatest discord exists as to their interpretation.' One school of geologists attributes them to the action of land ice at a time when the land stood at a somewhat higher level than at present during the Ice Age, whilst the other (p. 163) 'believes in much greater changes of level, in consequence of which the land at first was rather higher than it is at the present time; then it slowly sank until the submergence on the western side of England amounted to not less than 1,400 ft., but on the eastern it probably was not more than half as much. By this school the boulder clays in the main, and the mid-glacial sands and gravels, are supposed to have been deposited under water, being diverse in date and composite in origin.' The arguments on both sides seem to be stated with great impartiality, but to refer to them in detail would be to exceed the limits of such a notice as this. Professor Bonney admits (p. 186) that 'in the present state of our knowledge a choice has to be made between hypotheses each of which involves serious difficulties.'

A chapter on 'Ice Work in Europe and Other Parts of the World' completes Part II., and it soon becomes apparent that the problems presented by glacial phenomena in North America offer no less difficulty, and produce no less division of opinion, than they do in this country.

Part III.—'Theoretical Questions' commences with a very valuable and carefully worked out chapter on 'Temperature in the Glacial Epoch,' in which it is shown that a very moderate reduction of temperature would suffice for the production of a condition of glaciation adequate to account for the facts, especially as (p. 231) 'it must be remembered that the size of an ice-sheet depends

upon the amount of precipitation quite as much as upon the lowness of the temperature.' By a series of simple calculations (p. 233) seemingly based on reasonable premises, it is concluded that the conditions of the problem would be satisfied by a reduction of the mean annual temperature to the extent of 20° in the Welsh, Cumbrian, and West Highland regions, of 18° in the Alps, and of 15° on the north side of the Pyrenees, in the Schwarzwald, Grandes Vosges, Sierra Guadarrama, Sierra Nevada, Corsica, the group of the Gran Sasso d'Italia, the Atlas Mountains, and the Caucasus; whilst a drop of 6° to 8° might suffice for New Zealand. So that (p. 238) 'a reduction of 15° , or at most of 18° , ought to bring back a large area of Europe and the district around the Mediterranean to the condition which prevailed in the Glacial Epoch, though perhaps it would be hardly sufficient for the British Isles.'

In the next chapter 'The Possible Causes of a Glacial Epoch' are dealt with, and reasons are given for the conclusion that (p. 249) 'no hypothesis in explanation of the Glacial Epoch is admissible if it involves any very serious alteration in the distribution of sea and land.' The influence of the Gulf Stream, elevation of the land, changes in the ellipticity of the earth's orbit, the precessional movement of its axis of rotation, and irregularity of heat emitted by the sun are all passed in review, and in turn dismissed (p. 260) as 'inadequate, or attended by grave difficulties. It is, therefore, probable that some factor which is essential for the complete solution of the problem is as yet undiscovered; or, at any rate, the importance of one which is already known has not been duly recognised.'

The succeeding chapter, on 'The Number of Glacial Epochs,' may be briefly summarised in the concluding sentence (p. 269): 'So far, then, as the existing evidence at present goes, a Glacial Epoch appears to have been a very rare, perhaps an almost unique, episode in the history of the earth.'

Chapter IV., completing the work, deals with 'Glacial Deposits and General Principles of Interpretation.' It is there (p. 270) argued that 'evaporation must precede precipitation . . .' and 'hence alterations in the magnitude and distribution of the oceanic areas will cause some variation in the rainfall of the globe. These, however, in late geological times are not likely to have been large enough to affect seriously the total precipitation, though they may have materially influenced that of particular regions. But if the Glacial Epoch resulted from a diminution of the sun's heat, and a consequent general lowering of the temperature all over the globe, evaporation and precipitation would be alike affected. In such case, assuming the Gulf Stream to follow its present course, the rainfall (or snowfall) on the British and Scandinavian coasts would be less than it is at present. . . . Thus (p. 271), the vast polar ice-caps of glacial ages imagined by some geologists seem hardly better than "the baseless fabric of a vision," for they would require conditions mutually antagonistic—that is to say, a large precipitation and a much lower temperature.'

The chapter concludes (p. 276) with an application 'of the knowledge obtained by a study of the Alps and Greenland to determining the physical geography of Britain during the Glacial Epoch. That its hill regions have been occupied, in some cases almost buried, by glaciers, that it retains in many districts indications of the action of ice, all are agreed; but the form which this ice assumed is the question in dispute.' For the 'ice-sheet' we must postulate (1) a non-insular condition, and a general 'uplift' of some 600 feet; and (2) a fall of 18° to 20° in the mean annual temperature. 'The alternative hypothesis (p. 283) that floating ice was the chief agent of distribution of boulder clays and erratics in the lowland districts' is, in Professor Bonney's opinion, 'associated with serious difficulties,' such as the assumption of 'a greater mobility in the earth's crust than a majority of geologists at the present time would be willing to admit. For not only the necessary upheaval, but a movement quite as great in the opposite direction, must be crowded into the Glacial Epoch, for the ground at the beginning of it is generally admitted to have stood rather above its present level.' After an enumeration of other and more special difficulties, Professor Bonney concludes thus (p. 283): 'Probably, however, the final verdict in this difficult trial in the Court of Science will not be pronounced till more information has been obtained, and Polar regions have been more thoroughly studied, with a view of learning the effects, habits, and physical properties of large masses of ice. Still, we may, perhaps, say that enough has already been ascertained to enable the student to distinguish how far an hypothesis is an induction from facts, and how far it is an offspring of the imagination.'

In endeavouring to give a general idea of the contents of this very valuable and interesting contribution to a fascinating subject, I have been compelled to omit many facts and arguments in support of the conclusions arrived at, but I trust that I have said enough to show that the volume is the outcome of wide and well-digested knowledge, combined with a happy literary facility for making the numerous difficult questions involved intelligible not only to the class of readers for whom 'The International Scientific Series' is especially designed, but also to the general public. To mountaineers in general, or, indeed, to anyone desirous of an intelligent preparation for a visit to Alpine regions, Professor Bonney's 'Ice-work,' and Sir J. Lubbock's 'Scenery of Switzerland,' are warmly to be recommended. The volume is printed with exceptional accuracy, and about the only error which has caught my eye is that, in the map (p. 69) of the great Malaspina glacier, the height of Mount St. Elias is given as 15,350 feet, whilst in the preceding page it is accurately enough put at 'about 18,100 feet,' the exact figure being, I believe, 18,015. In conclusion, I would put in a plea for the substitution for 'Glacial Epoch' of some such expression as Glacial Era, or Ice Age, as 'epoch' clearly denotes a point from which a computation begins, or a fixed date when one period closes and another commences.

F. F. TUCKETT.

Sport in the Alps: an Account of the Chase of the Chamois, Red Deer, Bouquetin, Roe Deer, Capercaillie, and Blackcock, with Personal Adventures and Historical Notes, and some Sporting Reminiscences of H.R.H. the Late Duke of Saxe-Coburg Gotha. By W. A. Baillie-Grohman. (London: A. and C. Black. 1896.)

Mr. Baillie-Grohman is fortunate in finding a comparatively open field in the subject-matter of his latest volume. As he remarks in his preface to the work under review, the literature of Alpine sport is singularly scanty. While of the making of books upon mountaineering there is seemingly no end, I know of only one in the English language—and that is nearly forty years old—which deals exclusively with chamois-hunting and the kindred branches of Alpine venery. It is to the task of filling this void in the literature of the subject that Mr. Baillie-Grohman has addressed himself. Few men could be better qualified than he for the undertaking, and he is much to be congratulated upon the book which is the result of his labours.

The first chapter deals with 'Chamois-Hunting in the Old Days,' and the author apologises, quite unnecessarily, for what he fears may prove dry reading, but which is, in my opinion, among the most entertaining portions of the book. It is a delightful miscellany of ancient Alpine hunting lore, and much more interesting than, for example, his somewhat lengthy descriptions of the shooting-boxes and parties of royalties and German excellencies. Mr. Baillie-Grohman has had access to many sources of information which are beyond the reach of most writers upon the subject, and he has succeeded in unearthing much quaint and readable material. The weapons employed in mediæval mountain venery appear to have been singularly varied, ranging from javelins and cross-bows to fire-tubes and matchlocks. In later and more degenerate days even cannon were employed, and a certain noble duke appears to have once endeavoured to 'brown' a large herd of chamois with howitzers from the foot of the mountain!

There are many people in this country who seem to think that the chamois is a practically extinct animal, and that the chase of the nimble mountain antelope is nowadays a mere make-believe. I commend to their notice Mr. Baillie-Grohman's interesting chapter on the number of chamois in the Alps. He quotes figures published by the Austrian Government, and tells us that there are in the Salzburg mountains alone more than 22,000 head. He calculates that about 11,000 chamois are shot annually in the Alps. Of course the vast majority of these are killed in preserved shoots, and it is lamentably true that the game is rapidly decreasing in Switzerland and other unreserved ground. Every other peasant one meets is a hunter now, and the introduction of breechloaders and repeating rifles has decimated the herds to such an extent that good sport is quite unobtainable in *chasses* open to the public.

On the fertile topic of the difficulties and perils of chamois-hunting the author naturally has somewhat to say. As a good sportsman

he of course prefers stalking to driving; and he brings out very clearly the immense difference between shooting over preserved and unpreserved ground. In the big drives of royal or archducal personages chamois may be bowled over as easily as roe deer in Scotland, whereas the stalker in peasant shoots finds the game both scarce and wary, the ground probably difficult, and himself pitted against the best native talent. A further distinction may be drawn between hunting among the snow- and glacier-covered peaks of the High Alps and the same sport as practised in the lower mountains of the Tyrol and Bavaria. In the former, leaving climbing difficulties out of the question, the distances are much greater, and fatigue is apt to tell upon the hunter's shooting, while, the game being often pursued above the extreme limits of vegetation, it is more difficult to move noiselessly. To sum up, chamois-driving in a well-stocked preserve and stalking on, let us say, the crags of the Wetterhorn or Mettenberg, where many a too adventurous Oberland *Jäger* has lost his life, may be regarded as at the opposite poles of danger and difficulty.

The portions of the book devoted to the Alpine stag and stag-hunting contain, like those dealing with the chamois, much quaintly illustrated antiquarian lore and many interesting facts of natural history. Mr. Baillie-Grohman's comparison of Continental with Scotch deer is much to the disadvantage of the latter, and his remarks on the causes of the sad deterioration which has taken place in the heads and the weights of Highland stags are well worthy of attention. The dimensions he gives us of some Hungarian antlers, almost rivalling those of wapiti, and the size of the stags that bore them, appear truly astonishing. His hunting-grounds in the Alpine and Hungarian woodlands are admirably pourtrayed, and the following picturesque description of a forest scene in the Carpathians is worth quoting:—

Around, below, and also partially above me great green billows of forest stretched away, broken here by a patch of barrenness, where rocks of fantastic shapes rose far beyond the surrounding ocean of tree-tops, there by sylvan glades that seemed to penetrate into the very heart of the forest. Right at my feet, a quarter of a mile off, lay a bigger glade, its peculiar bright green colour betraying the marshy nature of the ground. Thereabouts, or a little beyond, I concluded the stag was calling.

The stags are hunted in the rutting season, when 'the lusty champions of the forest, whose virile passions, to the utmost inflamed, cause them to battle with a sturdy vehemence betrayed by no other wild creature in the wild realm of nature.' Their whereabouts in the wood is betrayed by their roaring to the stalker, whose practised ear enables him to gauge the size of the animal by the volume of sound which he emits. It is no easy matter, however, to ascertain his exact locality amid the dense foliage, and one shoots, in nine cases out of ten, 'not at stags, but at brown patches momentarily visible between trees that hide the rest of the animal's body.'

The chapter on the bouquetin and the chase thereof displays, as might, perhaps, be expected, a less intimate acquaintance with the subject than characterises the remainder of the volume. It contains, nevertheless, some interesting information. Mr. Baillie-Grohman pays a just tribute to the memory of the late King of Italy by reminding us of the debt which sportsmen and naturalists owe him for preserving in the mountains of Cogne the race, elsewhere extinct, of Alpine ibex. By a curious slip the author speaks, in another part of the book, of 'the practically extinct bouquetin;' but happily there is no fear at present of this most interesting beast ceasing to exist. He mentions that there were five hundred to a thousand of them in 1877, when Victor Emanuel last visited his beloved Alpine retreat. There are two or three times as many now, and I think he is wrong in supposing that they are less jealously guarded than formerly. It is true that the punishment he mentions of nine years' imprisonment for killing one of the King's bouquetin is not, as he seems to imagine, still enforced. This barbarous penalty, savouring of those dark ages when a sporting prelate caused a wretched peasant, who had killed a stag that ravaged his crops, to be torn in pieces by the archiepiscopal hounds, was reduced a few years ago to two years' imprisonment; and now only a moderate fine, coupled with the confiscation of the poacher's weapon, is inflicted. A visitor to the King's magnificent preserves will hardly confirm Mr. Baillie-Grohman's statement that the bouquetin is the rarest big game in the world. He is also mistaken in saying that the King has not hunted ibex since 1894, as he had a grand battue in the summers of both this and last year. Various efforts have been made to introduce the bouquetin from the Italian Alps into Austria, but for climatic and other reasons the experiments appear to have met with but partial success.

The description of the roebuck and its chase is less interesting from a sporting than a natural history point of view, though it almost makes one hold one's breath to hear that the annual bag of roe in Austria-Hungary alone certainly exceeds 100,000 head. There are several interesting illustrations of large and curious roebuck horns and monstrosities of heads. To the general reader this chapter, as well as that upon capercaillie and blackcock shooting, will probably prove less interesting than those on the larger game.

Concerning marksmanship and the choice of rifles Mr. Baillie-Grohman's remarks are worthy of study, though of course on such vexed questions there must always be much difference of opinion. He avows a preference for the .400 or .450 Express over the new small-bores, though he admits that the latter have the advantage in their smokelessness and comparative noiselessness. I can thoroughly endorse his observations on the injury done to chamois hunting-grounds by magazine or repeating rifles. The 'pyrotechnically inclined' sportsman armed with a repeater who, after missing his first shot, 'pumps lead' at the game as long as it is in sight, does an infinity of mischief by scaring the herds. The author suggests

that a good way of schooling oneself to shoot carefully is to limit one's supply of cartridges.

Mr. Baillie-Grohman is at variance with me on the subject of the difficulty of hitting chamois. He thinks they are decidedly easy: in my humble opinion they are distinctly difficult, and I am content to know that the majority of stalkers are on my side, including such a veteran sportsman as Mr. E. N. Buxton in his excellent work 'Short Stalks.' I should like to explain that when I spoke of 'failures ranking with successes in the proportion of about four to one' I was speaking, not of shots, but of stalks, and those in unpreserved ground in the High Alps. Mr. Baillie-Grohman is careful to explain that some of his shooting has been done on easy ground, and at elevations not exceeding 4,000 ft. None the less it is evident that his aim is very deadly; and I cannot help thinking that, as he tells us that in his early muzzle-loading days he 'rarely missed,' and that his average 'was for whole seasons but little above the number of shots fired,' he strains modesty somewhat in describing himself as only a moderately good rifle shot.

These and the like, however, are mere critical details which in no way mar the merits of the work as a whole. The volume is admirably got up, the text and illustrations, which are very numerous, being both excellent; and the style is eminently bright and readable. It should appeal alike to the sportsman, the naturalist, and the mountaineer, and as a fellow votary with the author at the shrine of the *Gemsjagd* I can only conclude by cordially wishing him the success that his book deserves.

HUGH E. M. STUTFIELD.

L'Homme devant les Alpes. Par Charles Lenthéric, Ingénieur en chef des Ponts et Chaussées. Librairie Plon. (Paris, 1896.)

M. Lenthéric is favourably known to some of us by several books dealing with the antiquities of the coast of Provence. Their success—one of them has been 'crowned by the French Academy' and another recently translated into English—has, unfortunately, encouraged him to a larger literary venture. 'Unfortunately,' we must say, for this work on the origins, physical and historical, of the Alpine region is, as a whole, unequal and imperfect, and is defaced by a crop of errors in matters of elementary detail so abundant as to impair our confidence in the author when higher matters come under consideration. The scheme of the work demanded almost encyclopædic knowledge in its compiler. Beginning before the world was, M. Lenthéric sets himself to deal in turn with all the most disputed problems in geological and anthropological science and primitive history. He stops on the way with a light heart to prove 'that it is possible to make the story of Genesis and its summary account of the different periods in the creation of the world agree with all the hypotheses, all the doctrines, and all the discoveries of science, soundly and honestly interpreted.' He is ready to define the difference between 'revealed religions,

Judaism, Christianity, Mahomedanism,' and 'mythologies'; and he finds it in the divinisation by the latter of a crowd of natural objects, amongst others sources and mountains. He fails, however, to produce any respectable local gods for the Alpine summits, and is consequently reduced to such shifts as are exhibited in the following passage:—

'Pen was essentially the genius of the great mountains. He gave his name to the whole section of the Alps that extends from the Little St. Bernard to the St. Gothard—the Penninæ Alps, the Pennine Alps—and includes in its mighty frame the highest summits of Europe, Monte Rosa, the Cervin, the Simplon, Mt. Blanc.' This sentence—we pass over its slips in detail—shows surely a strong tendency to put the cart before the horse. *Pen* in its various forms—in Scotland, Italy, Spain: Ben, Pania, Peña—is a Keltic word for the head of anything, hence for mountains. Jove, as the protector of travellers, was hailed as *Penninus* on the Alps, just as Apollo was hailed as 'Delius et Patareus' by Greek sailors. One might as well write of the god—*Pat*! The *Pennilacus* of the Peutinger Tables has nothing to do with the tarn on the Great St. Bernard. It was the station at the head of the Lake of Geneva.

M. Lenthéric is content to give the popular derivation of Alps from the root *alb* (*white*). He has not noted the fact that it is the part of the Alps which is not white, but green, which is known distinctively and locally as 'the Alps;' that several minor chains, seldom or never snowy, bear a similar appellation; and that the one distinctive mark of the regions known as Alps in Keltic lands is that they are regions of pasturage. In dealing with the classical passes he boldly states (p. 388) that Polybius says that Hannibal crossed the Mt. Genève. How much weariness would the world have been spared had this been exact! He quotes Varro frequently, but not on the question of the Western Passes.

It is, however, in the simplest matters that M. Lenthéric's carelessness is most conspicuous. In his orographical chapters he indulges in a series of statements which must make even the ordinary tourist ask, 'What next?'

To take no note of ordinary misprints, we are told that '*Blumisalp*' (*sic*) may be translated '*l'Alpe des Fleurs*'; that the '*nom caractéristique*' of the Monte della Disgrazia '*rappelle les pénibles efforts nécessaires pour le gravir*!' The name is probably due to the inundations caused by one of the torrents flowing from its flanks. From the Superga above Turin, M. Lenthéric assures us that the eyes can embrace the plains of the Po and the semicircle of the Alps 'from the Apennines to Switzerland, to the lagoons of Venice, and the promontory of Istria.' One of his compatriots, it is true, long ago thought he saw from Mont Blanc 'Venice floating like a halcyon on the waves of the Adriatic.' But our author, in his scorn of the laws of nature, has here surpassed every one—unless Thackeray's Little Billee!

The Col de Bernina, we are informed, leads from 'Samaden and

St. Moritz, the last towns of Switzerland, to Bormio and Sondrio; the first of Italy; between glaciers and frozen lakes, and 'à travers d'immenses champs de névés.' Poschiavo and Tirano are forgotten, and this description of a pass crossed by a carriage road lined with hospices, and traversed in summer by thousands of tourists and in winter by hundreds of wine-carts, is, to say the least, picturesque.

The road of the Julier, we learn, is 'à rigueur carrossable,' that of the Maloya 'à peu près carrossable,' the Fluela a mulepath! Needless to add, the new road over the Grimsel is ignored. The final chapter deals with Alpine railways, and here M. Lenthéric is more at home and furnishes some interesting facts and figures.

M. Lenthéric, doubtless, is an authority in matters connected with his own profession. He has read widely. He writes elegantly, though with an occasional tendency to superabundant ornament. But his subject has been too vast for him, and he has not approached it in the proper spirit. There is an ample field for students who are ready by careful investigation of local nomenclature, of dialects, of customs and of types, to throw light on the distribution of the various primitive races—Iberian, Etruscan, Keltic—which have colonised the Alps. A writer versed in the old chronicles or even in current German literature might glean much valuable information on the story of the Alpine passes. There are records of Saracenic incursions and Teutonic migrations to be worked out. But these tasks require a less discursive and more accurate treatment than that of M. Lenthéric's latest volume—which, despite its numerous references, cannot be considered as a work of any real scientific value.

La Chaîne du Mont-Blanc. Carte au $\frac{1}{75,000}$ ^{ème} dressée sur l'ordre de Albert Barbey par X. Imfeld, Ingénieur, d'après les relevés, les mensurations et la nomenclature de Louis Kurz et d'après les documents existants. Kümmerly Frères. (Berne, 1896.)

The Chain of Mont Blanc has, since Forbes mapped the Mer de Glace, and Mr. Adams Reilly led the way in correcting and improving the early French surveys, been a favourite field for the private mapmaker. Colonel Mieulet and M. Viollet le Duc both produced sheets which in execution were of unusual pretensions. M. Imfeld, who is responsible for the technical work of the map now before us, is one of the Federal staff and familiar with its exquisite methods, which have carried colour-printing to a pitch of perfection unattempted, and even undreamt of, in our own Government establishment at Southampton. In their latest sheet the Swiss cartographers have succeeded, by the combination of the most delicate hill-shading with contour lines, in uniting scientific accuracy and graphic delineation. In the new map of Mont Blanc now before us no contour lines have been attempted. The omission was, we learn, deliberate. No doubt there are arguments in favour of the course adopted, particularly in a map the primary object of which is not scientific. In all other respects the new map is a

worthy rival to the official Swiss survey. The snow region is depicted with much, and generally, as far as we can test it, accurate detail. There is not, however, enough rock shown on the N.W. face of the Aiguille du Gôûter, and the buttresses of 'La Tour Ronde' have not, we think, been quite accurately depicted. The selection of paths is generally judicious, the nomenclature has been carefully considered, the colour-printing is clear and accurate. In short, a better map for its purpose—for the use of mountaineers—could hardly be produced. The only technical criticism we are inclined to make is that, in the absence of contour lines, the relative steepness of the snows is somewhat confused by the system of lateral illumination employed.

Bollettino del C.A.I., vol. xxviii., or No. 61. (Torino: 1895.)

The 'Bollettino' opens with an 'In Memoriam' notice of Father Denza. The graphic and full account of the Valle di Saint-Barthélemy,* by S.S. Canzio and Mondini, has already had attention called to it in these pages. S. R. Gerla writes a description of his praiseworthy explorations in the mountains of Dèvero (Lepontine Alps). S. A. von Rydzewsky narrates his ascent of the Cengalo from the N., and gives an illustration which will make everyone who looks at it long to try the peak himself. This is followed by an exhaustive monograph on the Adamello group, by S. P. Prudenzini, for which all visitors to and writers on that district will be grateful. S. P. Gastaldi takes us to the little-visited Chambevron group in the Cottians. S. G. Bobba revisits the Grand Paradis District, for which he has already done so much. He gives charming pictures of the Becchi della Tribulazione, from photographs by S. Vittorio Sella. We heartily congratulate him and S. O. de Falkner on their conquest of the central and northern peaks of the Becchi respectively. Want of space prevents us doing justice to S. Bobba's paper. S. L. Cibrario writes of the Bessanese, 'le Cervin du Val d'Ala,' as an enthusiastic French climber dubbed it. S. Gonella tells the story of the Duke of the Abruzzi's energetic and successful campaign. The narrative, which is lavishly adorned with excellent illustrations, contains a letter from Mr. Mummery, who climbed the Matterhorn by the Zmutt ridge with the Duke. Science is represented by S. A. Galassini, and 'La mort de Tartarin,' by S. Guido Rey, concludes a volume which quite reaches the high standard of its predecessors.

Ueber Eis und Schnee. By Gottlieb Studer. New edition prepared by A. Wäber and H. Dübi. Vol. I. (Bern: Schmid, Francke & Co. 1896.)

Attention was drawn in these pages † to the issue of the earlier parts of the new edition of Vol. I. of this classical work. This

* *Alpine Journal*, vol. xviii. p. 133. In King's *Italian Valleys of the Alps* (London: 1858), c. viii., will be found an interesting description of this valley and an amusing account of the author's adventures there.

† *Alpine Journal*, vol. xvii. p. 52.

volume has now been completed by the issue (in October last) of Part IV. It contains what are called the 'Northern Alps,' that is, roughly speaking, the high ranges north of the Rhone and Rhine valleys, from Martigny to Coire. The editors have done their very difficult work of bringing an old book up to date very well. Instead of the 800 pages of the first edition, we have now 528 (including 16 devoted to a short sketch of the life of the author). The old scheme is followed with a few modifications, so that this first volume describes the Bernese, Titlis, Damma, Tödi, and Glarus Alps. Of course, in a collection of so many names, dates, &c., a few slips were inevitable, but many of them have been corrected in a list of 'errata' at the end. We miss, however, any mention of the Uri Rothstock, which appears all right in the old edition. It seems, too, a pity that neither edition describes the Dent de Morcles, Grand Moeveran group, which certainly merited a brief mention. An odd slip occurs at p. 383, in the account of the famous race up the Lauterbrunnen Breithorn in 1865. The new edition states that Herr von Fellenberg's party beat that of Messrs. Hornby and Philpott by 15 min. But Herr von Fellenberg, in his original narrative,* says that the difference was only 10 min., and this version is given in the old edition of Studer (i. p. 255). It might have been noted that the English party † reduce the difference to 5 min. But the fact that a reviewer is obliged to discuss such trifles shows how well the new editors have executed their task. It is much to be hoped that they will receive sufficient encouragement to induce them to re-edit the two other volumes of Studer, so as to complete the work in its new form. Students of Alpine history will find this new edition quite indispensable.

W. A. B. C.

Die Schweizerische Landesvermessung, 1832-1864 (Geschichte der Dufourkarte). Published by the Federal Topographical Bureau. (Bern: 1896.)

This officially published work will interest all those—and their name is legion—who have had occasion to use either the great Dufour map of Switzerland, or the Siegfried map, which is simply a revised edition of the original large scale survey made for the Dufour map. Beginning with a brief survey of the state of Swiss cartography before the appointment of Dufour in 1832, as head of the Triangulation Commission, this book gives (from the official documents and correspondence) a very minute and interesting account of the way in which that survey was carried out in the different cantons, of the criticisms made on the first sheets (issued in 1845), and of countless other details. As the Swiss map, in either form, is by general consent the finest survey of a difficult mountain country yet published, it is very convenient to have in a compact form the history of the rise and progress of such a great undertaking. A photogravure of Dufour, after the portrait by Ary

* *S.A.C. Jahrbuch*, iii. p. 308.

† *Alpine Journal*, ii. p. 210.

Scheffer, is prefixed to the book, which is rendered very useful by an excellent and detailed index. W. A. B. C.

Aus den Bergen. Wanderungen durch Graubünden und Tirol. By E. Walder. (Zürich: F. Schulthess. 1896.)

This little work is made up of a number of papers, some of which were originally published in the now defunct 'Schweizer Alpenzeitung,' of which the author was formerly editor. Save one on the environs of the Vereina Club hut, not far from Klosters, in the Prättigau, and another on the Hoher Riffler, in the Tirol, they describe the Lower Engadine, with some of its little known side valleys, and the mountains at the west end of the Rhätikon, which are included in the miniature principality of Leichtenstein. Naturally, therefore, no very thrilling adventures are narrated in this little work; but it may serve to draw attention to some corners of the Alps which are not very well known to English travellers, although they are easily accessible. The seven woodcuts are rough, and scarcely improve the book. W. A. B. C.

L'Argentera et ses Ascensionnistes. By Michel Gilly. (Nice: 1896.)

It seems desirable to draw attention to this very thorough monograph on the monarch of the Maritime Alps (8,817 m.), which appeared in the sixteenth 'Bulletin of the Maritime Alps Section of the French Alpine Club.' Those who are interested in this district know how complicated the Alpine history of the Argentera has been, and will gratefully appreciate the painstaking labours of M. Gilly, who has solved pretty well all the difficulties that have arisen on this subject, and has also compiled an account (in the style of the 'Climbers' Guides') of all the routes up this fine peak. From a table at the end of this pamphlet, we learn that but seven authentic ascents of the south and highest summit have been made between 1879 and 1895, all but two being by French climbers. A photograph of the peak, taken from the Cima di Nasta to its S., is prefixed, and is said to be the first photograph ever published, previous views having been reproductions of drawings. But the author has overlooked the two views given in Sir Martin Conway's 'The Alps from End to End,' though these are, unfortunately, but drawings after photographs. As the Argentera commands on one side a view of the Mediterranean coast, and on the other of a considerable section of, perhaps, the least known portion of the Alps, it is much to be hoped that some day a complete panorama from the summit may be taken, and published. This would prove that it is not always the highest and most frequented summits which are the finest belvederes. M. Gilly has been one of the most persevering explorers of the Maritime Alps, and has now crowned his previous labours by this 'definitive' monograph on the loftiest point of that range. W. A. B. C.

CORRESPONDENCE.

THE WEISSHORN FROM THE SHALLIJOCH.

To the Editor of the ALPINE JOURNAL.

SIR,—Our attention has been called to a paper under this heading in the last number of the 'Alpine Journal,' and it has been suggested to us that it is advisable, in the interests of Alpine history, to correct some very inaccurate and, so far as we are concerned, entirely unauthorised statements which the author has therein made with regard to our own route up that mountain by the south-east face and south-west (Schallijoch) arête in 1877.

As will be seen on reference to the note at p. 340 of vol. viii. of the 'Alpine Journal,' and to Mr. Hartley's paper in the same volume, we ascended direct up the south-east face of the peak to a point which we estimated at the time to be about 1,500 ft. below the summit. We struck the arête at 11.20 A.M., and reached the summit at 1.35 P.M., so that the arête was followed for 2 hrs. 15 min., or about half the total (actual walking) time employed in climbing the mountain from our breakfast place beneath the bergschrund.

Our route is correctly indicated in the tracing which appeared in the 'Alpine Journal' for November 1895, and which was supplied at the special request of the then editor (Sir Martin Conway) by one of our number. We confess we are somewhat surprised in these circumstances that Mr. Broome's statements should have been allowed to appear in the 'Alpine Journal' without any sort of editorial comment or explanation.

We are, Sir, your obedient servants,
 J. WALKER HARTLEY,
 W. E. DAVIDSON,
 H. SEYMOUR HOARE.

October 9, 1896.

To the Editor of the ALPINE JOURNAL.

DEAR SIR,—I thank you for sending me copy of above letter. I of course accept the corrections therein contained, though I tried to state the facts as they appeared to me, and could not (nor can I now) quite reconcile the 1877 track, as shown in the 'Alpine Journal' for November 1895, with the original note and Mr. Hartley's paper.

I am, yours truly,
 EDWARD A. BROOME.

THE DOM.

To the Editor of the ALPINE JOURNAL.

Edinburgh: Sept. 10, 1896.

DEAR SIR,—In Mr. Broome's delightful paper on the Weisshorn, in the last number of the 'Alpine Journal' (p. 147), there are some

statements on which I hope you will allow me to make a few remarks, as his words convey an imputation—which I think undeserved—on the character of that respectable mountain the Dom. He complains of its eastern face as constantly raked with stones, and the ascent of it as a sort of 'Balaclava affair.' I cannot help thinking that the Dom must have been in an exceptionally bad humour the day he went up, for my experience was quite different. I went up from Saas-Fée, towards the end of August 1888, with Clemenz Zurbriggen and another Saas man. We passed the night on some rocks well above the Fée Glacier, at a point almost immediately below the Dom-Joch. We had a horrid night of it, for there was a heavy thunder storm and a good deal of snow fell. It took some time to clear, and we did not get off till past 5 next morning. We traversed nearly straight across the face of the mountain, which was, no doubt, seamed with shallow couloirs, down which something—snow or ice apparently—was in the habit of sliding; but I can safely say that we did not see a single falling stone during this passage. We then struck a rocky rib, with snow at intervals, which led straight up to a projecting point three or four hundred yards to the right—*i.e.* to the N.E. of the summit—whence the route to the summit was easy. On this rib the climbing was sometimes rather awkward, from the fresh snow, but again we saw no falling stones. Possibly the new snow contributed to keep them quiet, but I cannot help thinking that if the traverse—which is quite simple—is made early in the morning, the danger will be reduced to a minimum. No doubt after a few hours' sun it would be a very different matter, but this seems easy to avoid; and, once on the rocks, I do not think there is any risk at all to be feared. I merely mention these facts and impressions because I should be sorry to think that so good a climb as the east face of the Dom undoubtedly is should be avoided because of annoyances which I cannot help thinking must have been due to an exceptional condition of the mountain or to some error in the route taken.

Yours faithfully,

G. W. PROTHERO.

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Atama from the North-West.

THE
ALPINE JOURNAL

FEBRUARY 1897.

(No. 195.)

MISHIRGI-TAU AND AİLAMA.

By HERMANN WOOLLEY.

(Read before the Alpine Club, December 14, 1896.)

ON the morning of August 2, 1889, I stood by the wooden bridge at Balkar, watching Messrs. Freshfield and Dent and Captain Powell with their followers as they ascended the western slope of the valley on their way to Bezingi. It was not with the most cheerful thoughts that, after their departure, I turned back into the muddy, uninviting village, knowing that for some weeks I should not hear the sound of my native language, and being uncertain how our party would fare without an interpreter.

There was soon an opportunity of testing this point. It would never do to return empty-handed to Karaul; so, while waiting for a horse, I tried my skill at bargaining, and with the help of a few words of Russian and much pantomimic action on both sides soon became possessed of four chickens, a number of eggs, a small sack of bread and another of potatoes. These desirable acquisitions were slung across a small donkey, belonging to my newly-engaged native porter, Kutché Janibergoff; two other Tartars who seemed to have nothing better to do at the moment joined us; and so we journeyed up the Cherek valley to Karaul, where I had left my guides, Christian Jossi and Johann Kaufmann. Kaufmann had been on the sick list for several days; but on my return to the camp in the evening he seemed to be so much better that it was decided that Jossi and the porter should accompany me on an excursion up the Dykhsu Glacier, with the object of taking photographs and reconnoitring the district.

The next day was showery, but on the day following we

started at 5 A.M. up the Dykhsu gorge. The weather was still unpromising, and, enveloped in thick mist, we made our way up the narrow, picturesque ravine, which has no permanent path, and never can have one, owing to the ravages of avalanches and of the impetuous torrent. In 2 hrs. the snout of the Dykhsu Glacier was reached, and on surmounting it we emerged from the mist and found ourselves in a new region.

The portion of the glacier in sight was about 5 miles long and $\frac{1}{2}$ to $\frac{3}{4}$ mile broad, the lower part being, for about 2 miles, so completely covered with rock debris that no ice was visible. On our left—*i.e.* on the S. side—were the lofty snow-clad ridges of the main chain; further to the W. a large tributary glacier flowed in from the S.; further still was a fine snow-peak, Ailama; and, apparently at the head of the glacier, the imposing mass of Shkara.

On the N. side of the ice stream we could see only steep grassy slopes on which eight or nine 'tur,' or Caucasian bouquetin, were feeding.

Under Kutché's guidance we crossed to the N. side of the glacier, and walking sometimes on the moraine, sometimes on the hill-side up to our knees in flowers, and sometimes in the deep trough between the two, arrived at 11 o'clock at the widest part of the glacier. Close by was a hunter's 'kosh,' formed by an overhanging cliff of pale granite, and here I unpacked the photographic bag; but was dismayed to find that, in place of the camera, I had—in the darkness of the tent—packed up a spare case of dark-slides very similar in size and weight. Kutché had now to return to Karaul with a note to Kaufmann, while Jossi and I sat down to eat and to make fresh plans. Up to this time there had been no definite intention of climbing till Kaufmann was well enough to join us; but my companion, exalted in spirit by the splendid day and magnificent scenery, now proposed that, as we could not photograph, we should climb a good peak.

Ailama was rejected as being too difficult, and Shkara as being too big, so crossing the mouth of the side-glen down which the Khrumkol Glacier flows from the N., we continued on our way up the main ice-stream. At 2.30 P.M. we were in sight of the Dykhsu Pass, at the head of the glacier, and so near to Shkara that we felt strongly tempted to attack it; but I had now formed another plan.

Through a gap in the ridge to the N. the rocky face of Mishirgi-tau had appeared. As seen from the S.E. this peak, like so many of the Caucasian mountains, has two heads,

connected by a depressed snowy saddle. The western head is a massive tower of rock, while the eastern is a ridge crested with snow. Knowing that the year before (1888) Messrs. Holder and Cockin had climbed nearly to the top, and had then found themselves cut off,* I jumped to the conclusion that they had ascended the great rock tower and had been unable to get across to the eastern ridge, which seemed to us to be undoubtedly the higher. It was my impression that the peak did not greatly exceed 15,000 ft. in height, that it was fairly easy to climb and sure to afford an unrivalled view, therefore I proposed that we should attempt it.

Jossi, still hankering after Shkara, did not favour the idea. He had never heard of Mishirgi-tau, and did not appear to admire either its name or its appearance; but of course he agreed to my plan, only stipulating that I should choose my own route. Accordingly we turned northward up a snow-slope, and at 5.30 P.M. found ourselves on a snowy ridge, on the N. side of which a rocky escarpment fell away abruptly to the western arm of the Khrumkol Glacier. Mishirgi-tau, now visible from base to summit, lay to the N.W., at the head of the glacier, so that our next day's route was perfectly simple and straightforward.

For want of a more comfortable place we halted for the night at a tuft of rocks some distance along the ridge, at a height of nearly 12,500 ft. If the situation was somewhat unsheltered it was picturesque in the highest degree. We were surrounded by some of the noblest peaks in the Caucasus; the air was so clear that we could recognise the outline of Kazbek, seventy miles away; and the view at sunset of the tremendous precipices of Koshtan-tau was something to be remembered. As we ate our supper all the summits in sight glowed as if on fire, then faded one by one, Koshtan-tau and Mishirgi-tau keeping the glow long after the others.

After some hours of wakefulness I fell into so sound a sleep that when I awoke, with a start, it was broad daylight and already half-past four. As it was a splendid morning we made a hasty breakfast, and leaving our sleeping bags and some of our food on the rocks, went down to the glacier, and began to ascend it in the direction of Mishirgi-tau. The mountain now presented to us its broad south face of dark-coloured rock, while from the gap between the two peaks a great couloir filled with snow and ice swept down to the névé below.

* *Alpine Journal*, vol. xiv. p. 192.

By 8 o'clock we had reached the foot of the couloir, and, in order to avoid the steepest rocks, began to cut steps up it; but before we had risen more than two or three hundred feet we were startled by the humming of a stone whirling past us from above. Then came a second and a third. These stones probably flew at a safe height above us, but their velocity was so great that we could not see them, and they made a most demoralising noise; we therefore lost no time in leaving the



MISHIRGI-TAU FROM THE SOUTH-EAST.

gully for the rocks on its eastern margin. Turning round at this point, we were struck with admiration by the superb appearance of Ailama, now no longer foreshortened, and made a compact to climb it before leaving Karaul.

After taking some food we began the ascent of the rocks, which proved to be of the slab type, with occasional patches of snow. Though uniformly steep they were fairly firm and not particularly difficult, except at one place, where a smooth upright face almost baffled us; but it was eventually

surmounted by means of a well-known acrobatic feat supplemented by vigorous propulsion from Jossi's ice axe.

When the aneroid pointed to 15,000 ft. I was surprised to find that we were already higher than the top of Ailama, and it was now certain that our peak would prove to be much loftier than we had supposed. As we climbed nearer and nearer to the gap the rocks became steeper and the step-cutting in the snow patches more tedious. We now noticed, with some slight misgiving, that the great rock pinnacle towered above us to an unexpected height, and for the first time I began to feel a vague apprehension lest, after all, it should overtop the eastern peak. The saddle was gained at 1 o'clock, and, after a short halt, we turned our backs on the tower and began to walk eastward up the broad and easy snow ridge, our doubts increasing with every step. The weather had now completely changed, and thick clouds from the S.W. were drifting through the gap and enveloping all the surrounding mountains.

At half-past two—9 hrs. after leaving the sleeping-place—we arrived at the highest point of the ridge, a short, narrow crest of the snow about 16,350 ft. high; but our hopes of a view were disappointed, all the peaks around us, except Koshtan-tau, being quite hidden. By this time the western rock tower was also invisible, so we sat down on the snow, and had to wait about 10 min. before a break in the clouds came. Then I saw at once that its top was—to make a guess—40 or 50 ft. above us. At first Jossi maintained that our point was higher, but when the clinometer had decided the question he was profoundly disgusted, and looked at me as reproachfully as if I were in some way responsible for the shape of the mountain.

We now returned to the saddle, to see if there were any possibility of climbing the tower. None whatever from this side. We were separated from it by a sharp edge of snow not more than 100 yds. long, but at the further end of this rose a perpendicular face of rock which we considered absolutely unassailable. Our only chance seemed to be to cut steps in steep ice round the northern base of the tower, and so to get behind it. There was an hour's work in sight; what lay beyond we could not tell. But it was now after 3 o'clock, our food was almost finished, and the weather most unpromising. In the end we allowed our discretion to prevail, swallowed our disappointment, and turned to go down.

The descent of the rock face was made in thick mist, but the great snow gully on our right was a sufficient landmark.

At the awkward pitch Jossi lowered himself with some spare cord which we fortunately had with us. We found that stones were still humming merrily down the lower part of the couloir; and the névé was reached as it began to grow dark. I at first led the way down the Khrumkol Glacier, but Jossi did not approve my route and changed places with me. He, however, deviated too much to the S., and we soon became pounded in a network of crevasses, where the darkness increased our difficulties, and there was much step-cutting and loss of precious time before we got back again on to the even surface of the glacier.

It was now my turn to contribute to the evening's entertainment. Seeing some rocks on the S. side of the glacier, I insisted that they were those below our bivouac, and by the time steps had been cut up to them it was after 9 o'clock. The rocks proved difficult; the ice below was broken, and the night was now so dark that we decided to remain where we were. I lay down on a sort of terrace and fell asleep; but my slumbers were not unbroken. Once or twice every hour sounds as of the stamping of feet disturbed me. Each time the same weird vision—a gloomy hollow, fantastic peaks and ridges faintly shadowed in the mist, while a yard or two away, seated on a ledge, was a dim and dusky spectre warming its hands at a candle in a Vienna lantern. Perhaps we should have been more resigned to our situation if it had been possible to know that on the following night Mr. Freshfield's party would also be taking their pleasure under very similar conditions on the Shaurtu Glacier, ten or twelve miles away to the N.W.

At 4.30 it was light enough to move, so stretching our stiffened limbs we began to climb—as we hoped, up to our bivouac. Another delusion! The rocks were iced and difficult. The higher we climbed the higher we had to climb; but at last we gained the snow-ridge above, and were able to see the sleeping-place about 500 ft. below us.

We reached it at half-past seven, and fell eagerly on our reserve of food. After breakfasting and packing up we varied our route by following the course of the Khrumkol Glacier to its termination, and had a most interesting walk close under the lofty precipices of the southern ridge of Kosh-tan-tau. But our troubles were not yet over. The evil genius who seemed to be conducting this expedition beguiled us down to the very snout of the glacier, where it was impossible to get off, and another hour was lost in retracing our steps.

Below the apparent snout of the Khrumkol Glacier the ice

seemed to extend as far as the main Dykhsu ice-stream ; but its surface was loaded with a most extraordinary accumulation of rock fragments of all sizes from that of a cottage downwards. We named this spot 'Das Felsenmeer.' It was uncertain whether the debris had been brought down by the side-glacier, or was the result of a great fall of rock ; but, as the higher level of the main ice-stream formed an effective barrier, this vast rocky chaos, extending right across the mouth of the side-valley, lay wedged in behind and before, fretting, crushing, and grinding as the ice-bed melted or moved beneath it.

At 11.30 we regained the Dykhsu Kosh, and found Kutché there with the camera, and, to our great joy, a kettle boiling, just ready for making tea. The rest of the day was spent in taking views and returning to Karaul. At the end of the Dykhsu Glacier Jossi, who was some distance behind, appropriately finished the excursion by mysteriously disappearing. Fearing that some accident had happened, I went back on to the glacier to look for him, and it was not till three-quarters of an hour had been thus wasted that the Tartar's sharp eyes discovered, from the guide's footprints on the moraine, that he had taken another course while we were waiting for him. The gorge looked so beautiful in the evening light that my annoyance at the last episode soon abated, and the rest of the walk was attended by pleasant anticipations of supper and blankets.

On August 14—eight days after the first visit—Jossi and Kutché again accompanied me to the Dykhsu Kosh, our object being to climb Ailama. Kaufmann was to come up a day or two later, with more provisions, for an attempt on Shkara. We found the kosh fairly comfortable. Inside the low wall built up to the cliff there was room for four men to lie down, and the rocks overhung so far that when it rained no one got wet except the outside man. But it would be an ideal sleeping-place at which the outside man did not find something to grumble about. As firewood was very difficult to obtain we brought up with us, this time, a small oil stove, which proved most useful and added greatly to our comfort. During our stay we had many visits from Tartar chamois-hunters, who used to drop in at all hours of the day or night ; indeed, we never knew on lying down what our number would be in the morning. Having seen the oil stove at work, they appreciated it more highly than was convenient, and did not bring a stick of firewood with them on their next appearance.

Our first assault on Ailama was unsuccessful. The beautiful snowy cone of the mountain rises behind a huge rocky buttress, which separates it from the Dykhsu Glacier; and the crest of the buttress seemed to us to present the most likely route up the peak. But we had underrated both its length and its difficulty. On the day of our arrival at the kosh we crossed the glacier and bivouacked on the buttress at a height of 11,500 ft. Next morning, after sending the native back, we started up the ridge; but it proved to be cleft repeatedly by deep chasms, and after three or four hours of the toughest work encountered during that summer we were compelled to abandon the attempt. Yet our toil was not entirely fruitless: we had learnt that the western arm of the Ailama Glacier curved round behind the buttress and sloped up to the very foot of our peak.

Two days later Kaufmann, Kutché, and another native came up, as arranged, from Karaul; but they brought so little bread that I was forced to send Kutché at once to Balkar for more. Having already walked to the camp and back that day, he was naturally disconcerted at this additional duty, and muttered something in Turkish, of which only the word 'Shaitan' was intelligible. He soon, however, recovered his composure, and trotted contentedly off on his double journey.

Next day both the guides started with me, in very doubtful weather, for the long-intended attack on Shkara. A walk of 4 hrs. up the glacier brought us to the lowest rocks, and then the flood gates of the heavens opened on us to such purpose that we lost all interest in the peak. About 4 o'clock that afternoon three drenched and demoralised individuals, carrying three saturated sleeping-bags, might have been seen stealing unostentatiously into the Dykhsu Kosh, where they partook freely of hot tea, lighted their pipes, and spent the evening in silent reflection.

The result of this excursion was that Kaufmann again broke down, and had to return next day to Karaul, while Jossi and I, anxiously awaiting bread, went up a hill of about 12,000 ft., near the kosh, and obtained some more photographs. I cannot speak too highly of my guide's unselfishness during this and one or two other periods of short commons. At these times he would economise the provisions by pretending that he had no appetite, and would limit himself to little more than thin soup and tea.

Fortunately our trusty porter arrived in the evening with bread and two chickens, and at 7 next morning (August 19)

we all set out again for Ailama. This time we walked down the Dykhsu Glacier for an hour, and then turned southward up the Ailama Glacier; but as the great ice-fall was quite impassable it was necessary to take to the cliffs and grass-grown ledges on its left bank.

About 9.30 we had to cross a wide gully filled with hard avalanche snow. The native, though well laden, had climbed so well on the rocks that we had not yet put on the rope. Jossi, after chipping small steps in the slope, had gained the rocks on the far side, and I was just about to leave the snow when a noise behind made we look round just in time to see the Tartar shoot down the slope and disappear from view. Hastening back a few steps I got a full view of the slope. Two or three hundred feet below was the glacier, and at its margin were some large stones and a longitudinal crevasse, but no Kutché. 'He is in the crevasse!' I exclaimed to Jossi.

It is a true saying that 'nothing is fully appreciated till it is lost.' Kutché's value in my eyes rose immensely during those few moments. Instantly the woeful consequences flashed through my mind. How should I explain the catastrophe to the Starshina at Balkar? What could I say to Mrs. Janibergoff and her little bullet-headed Tartars? The situation was too dreadful; but just as I had lost all hope I was inexpressibly relieved to see a small figure pick itself up from behind a stone and begin to look about for something. His alpenstock had fallen into the crevasse. Jossi glissaded down to him, and having put on the rope descended into the crevasse, and in about five minutes recovered the staff; but it took more than half an hour to bring Kutché up to the rocks again. He was happily uninjured; but his comical face wore an unusually serious expression, and his demeanour was noticeably quiet and subdued during the rest of the day.

After passing the ice-fall we returned to the glacier, and skirting its true left margin were soon in sight of our peak. Its precipitous N.E. face, cased in snow and hanging glacier, did not look easy; but two ribs of rock ran for some distance up the mountain, and we decided to make our attempt by the western rib, which was less steep than the other.

We now turned into the western bay of the glacier, and when nearly at its head crossed it in a S.W. direction to the foot of the peak. Here, in place of the usual bergschrund, was found a great heap of freshly-fallen avalanche ice, by means of which it was easy to gain the foot of the western rib of rocks, and by 3.15 we had selected as our sleeping-place

a somewhat sloping platform of rock at a height of over 12,000 ft.

We had barely finished afternoon tea when it began to snow, and for two hours the weather looked quite hopeless; but at 6 o'clock the clouds rolled away, and a good sunset promised well for the morrow.

There was very little sleep that night, as in our exposed position we felt the low temperature keenly. The unhappy Tartar having no sleeping-bag, but only his burka, fared worst, and from time to time uttered lugubrious moans of 'Kholodnui! Kholodnui!' ('Cold! Cold!'); but having neglected to make any provision for shelter during the afternoon he was left to his own devices. Indeed, towards dawn the cold became so piercing that my own extremities claimed all my attention.

Although we were up at 3 A.M. damp firewood and other causes delayed our departure till a tender rosy flush was creeping down the slopes high above us. At 4.45 we left Kutché behind and started up the rocks; but knowing that the clothing of every Tartar is a more or less congested district, I could not help speculating as to which sleeping-bag would be colonised during our absence.

The rocks were of good, firm granite and free from difficulty, though painfully cold to the hands. After an hour and a half's climbing they ended, and we were confronted by a smooth ice-wall of more than ordinary steepness, but fortunately it was possible to avoid this by cutting steps up a ridge of ice which branched off to our right. As the ice was exceedingly hard our progress was slow, but in about an hour we gained a small platform of snow at the point where the crest of the great northern buttress joined the face of the mountain.

After leaving this spot I do not think that we touched a single rock; yet there was not much laborious step-cutting. Luckily for us, the cold night had left the snow in excellent condition, and we were able to take an almost direct course up the N. face towards the summit. Jossi made no mistake this time, but led splendidly throughout. The only obstacle which delayed us was a schrund with its upper edge thrown forward in a high overhanging cornice. This was turned by walking along the lower lip and smashing a passage through a fringe of icicles till a weak place could be found. Two or three higher schrunds were passed without difficulty, and a few minutes after 10 we walked on to the broad, almost level snow plateau which formed the summit.

It was now a splendidly fine day without a breath of wind.

As there was no stone of any kind near it was impossible to build a cairn, so that there was nothing to do but to eat our cold chicken, bask in the sun, and enjoy the wonderful panorama. Within a radius of seven miles were the three giants of the central group. Shkara's massive shoulders concealed all the great western mountains except the twin peaks of Ushba, while on the north Koshtan-tau and Dykh-tau completely dwarfed everything around them. The air was so unusually clear that we could easily discern the bands of purple, red, and white rock on the S. face of Dykh-tau, and our view extended beyond the volcanic hills of Piatigorsk, far away into the northern steppe. A bewildering multitude of snowy summits stretched away, group after group, to the E. and S.E., and behind them all rose the familiar shape of Kazbek. The view on the S. side was a peaceful contrast. Directly below us were smooth green downs. Two streams wandered away to the S. and S.W., soon losing themselves in a labyrinth of wooded hills, while the still more distant Georgian valleys were filled with sleepy-looking clouds.

Nearly 2 hrs. had been delightfully spent on the summit, when shortly before noon we began to descend. The snow was now so soft that on the steepest slopes great care was needful, and I could not resist the impression that the N. face of the peak should be left to itself when the conditions are at all unfavourable. Soon after 2 o'clock we regained the sleeping-place, and found our porter quite ready to be released from the solitude of his shelf of rock, where he had waited patiently for more than 9 hrs. In returning down the glacier the superiority of nailed boots over the native sandals was most marked on the wet snow and ice; but on the loose moraine of the Dykhsu Glacier Kutché, who had now quite recovered his spirits, simply walked away from Jossi and myself.

Following at a more sober pace, we reached the kosh as the evening shadows were stealing up the mountain-sides, and our last view before turning in was of the snowy cap of Ailama, gleaming with a strange, unearthly lustre against the darkening sky.

This was our last climb in the Dykhsu district. Next day we somewhat regretfully left the kosh and returned to Karaul, on our way to Urusbieh.

MOUNTAINEERING IN NORWAY IN 1896.

BY PROF. W. GRYLLES ADAMS.

ON the morning of August 27, in company with Mr. S. A. F. White and my son, with Mikkel Mundal as guide, I started from Fjærland for a few days' walking on the Justedal Glacier. We crossed the glacier by the usual route from the Böium valley to Lunde,* but could see little, as the upper part of the snow-field was shrouded in fog. We rowed down the Lunde fiord to Skej, and on the way had a heavy storm of wind and rain from the S.W. After being well taken care of at Skej we started next day for Aamot, in Stardal, crossed the Olden Skar to Briksdal, and had a lovely day. From Briksdal, where the beds were good but the food by no means satisfactory, we started next morning at 6 A.M., intending to cross the Justedalsbræ by the Austerdal to Hveitestranden, but the weather threatened and became so bad that after 2 hrs. climb we turned back and went straight down the valley to Olden in search of food.

Our guide had spoken of crossing the glacier by night, and was of opinion that on the snow-field even at the end of August the light would be quite sufficient all night long. Accordingly as soon as the storm had quite passed, and there seemed promise of fine weather, we took food with us for two days and started from Olden for Briksdal. Before we reached Briksdal at 1 P.M. we decided not to stop there, but to go on at once for a glacier route, and, if the weather held up, to attempt a night journey along the central plateau of the Justedal Glacier from Oldendal to Fjærland.

Starting up the valley of Briksdal, and crossing the stream, we reached the foot of the Briksdal Glacier, and went up the rocks and through a wood on our right below a hanging glacier—the southern branch of the Briksdal Glacier—and in about 2 hrs. from Briksdal had reached the foot of the central ridge of Kattenakken, the mountain between the Mælkevoldsbræ and Briksdal. From this point we looked straight down on the Mælkevoldsbræ, some 2,000 ft. below us. We ascended rapidly along the steep ridge or arête of the mountain, with a precipice on either side, and made our way sometimes on the left and sometimes on the right of the arête, where we were exposed to a very high wind from the S.W. on the precipitous face of the mountain above the Mælkevoldsbræ.† We climbed over

* *N. T. F. Aarboj* for 1881, p. 89.

† Lars Næbba.

the top of this mountain and continued southwards along the ridge to the point where it is lost in the glacier between the Mælkevolds- and the Briksdalsbræ. We reached this point at 4.30 p.m., having rested half an hour for food by the way. Immediately in front of us were numerous awkward crevasses running east and west and too wide to cross, and behind them a snow basin from which the glaciers of Mælkevold and Briksdal were fed, enclosed by a grand 'cirque' of ice and snow rising like the inner surface of a bowl, with horizontal crevasses which were wide at either end, but narrower in the middle towards the S.E. On the right the rim of the bowl, here greatly crevassed, abutted on rocks forming an island in the glacier about 1,000 ft. above us to the S., or immediately above the Mælkevoldsbræ.* We turned the crevasses immediately in front of us by going eastward towards an island of rock above the Briksdalsbræ. Then we gradually turned southwards towards the middle of the 'cirque,' where the ice was pressed together from the fall from all sides. In this hollow bowl we found the surface snow and ice very soft and slushy, with streams running very freely on the surface, and we had an unpleasant half-hour. As we climbed the 'cirque' the snow improved, and keeping somewhat to the E. we crossed the upper crevasses without much difficulty. Above the rim of the bowl we still ascended, but more gently, towards the S.E., over a vast undulating snow-field, until at about 6 p.m. we found ourselves on the central plateau, or backbone, of the Justedalsbræ, with clear weather and magnificent views in all directions.

On the west, like a shoulder of the main glacier, was a vast snow-field stretching away and sloping down towards the pass from the Aamotdal over the Olden Skar, which might probably be reached from the glacier. Behind us to the N.W. and N. were the mountains, with their hanging glaciers, enclosing the sides of the Oldendal, and some lofty mountains above the Loenvand, flanked on the N.E. by the plateau of the Justedalsbræ. Towards the east lay the Austerdalsbræ,† and in the distance we could distinguish the glorious peaks of the Jotunheim mountains, which we now saw for the first time. Towards the S.E., away in the distance, we had a clear view of mountains over the Langedal, and to the east of the Suphelle valley and further south were three grand mountains near together, standing up above the snow-field, which our

* Onsdags Næbba; vide *N. T. F. Aarboj* for 1884, p. 99.

† *A. J.* vol. xvii. p. 351.

guide could only suppose must be Kaldekari, Suphellenipa, and Almenipa, near the head of the Bøium Glacier. He had crossed portions of the glacier, but had never seen it free from fog, and could not, therefore, know how these mountains appeared when looked at from the north at a distance of eight or ten miles away. From the point we had reached opposite the head of the Austerdalsbræ, the central plateau of the Justedalsbræ slopes very gradually away towards the S.W. as a vast snow-field, which becomes quite narrow as the head of the Langedal is approached. Along this central plateau we walked at a good, steady pace, with the snow in fair condition. On our left was a wide snow-field between the Austerdal and the Langedal, which had been twice crossed by Mr. Slingsby, and again by Herr Bing, in bad weather, when the party were benighted. We went first toward the south, with the Optagsbræ rising in front of us as a lofty snow-field on the other side of the Langedal.* After about half an hour we turned to the S.W. along the watershed and looking down on the Langedal on our left. Towards the west the mountains and snow-fields were brilliantly lit up by the setting sun, and the scene was one which could not easily be described or forgotten.

The Justedal Glacier becomes very narrow, and is almost cut in two by the Langedal, so that the watershed almost touches the precipices on its western side overlooking the Fonsdal, a little to the south of Aamot, and then turns again to the eastward over the Optagsbræ. At the head of the Langedal, near these precipices, which we reached about 8 P.M., we came on the edge of a trough or valley in the glacier, some 150 ft. deep, crossed by numerous crevasses, with an almost precipitous wall of snow on its northern side. Before us on the other side of the valley was a huge chasm in the glacier, not like any ordinary bergschrund, but more resembling in form the mouth of a huge cavern or pothole in the side of the valley. The chasm reminded me of Gordale Scar, in Yorkshire. It seemed as if there must be some outlet for snow and ice at the bottom of this chasm through the precipices overhanging the Fonsdal, some 2,000 ft. below. Our way lay across the narrow valley to the left of the chasm and up to a considerably higher snow-field on the opposite side. The snow was in such excellent condition that we descended the snow wall rapidly, crossed the valley, and ascended the steep slope on the opposite side

* *N. T. F. Aarboeg* for 1890, p. 29, and map, p. 238; also *A. J.* vol. xiv. p. 506.

in the line of the crevasses and between them without difficulty or mishap, making for an island of rock which we had seen ahead of us for some time and where we intended to rest for supper. These rocks near the western margin of the great Justedal Glacier were reached at 9 P.M.; they formed a ridge, running north and south and overlooking the Fonsdal and the mountains of Björga, with a magnificent view towards the west and south-west in the direction of Skej and Lunde.

Here, as we sat looking toward the W. in the evening light, the snow-field sloping down in front of us was clothed with that wonderful deep pink or ruddy glow, more intense as well as more lasting than we had ever seen it on the mountains of Switzerland. Behind us, on the opposite side of a broad upland valley, was the Optagsbræ, an extensive snow-field. After supper and an hour's rest on this rocky ridge we started again at 10 P.M., looking carefully for and crossing crevasses which ran E. and W. across our path. We now went almost due S. in the direction of the Almenipa, over a fairly level part of the Justedal Glacier, skirting on our left the Optags Glacier, which rose like a flat dome to a considerable height towards the E. We had a clear, starlight night, and about 11 P.M. the moon rose and cast our shadows on the snow, and we had abundant light; the snow also was in fairly good condition and improving as the night advanced; it would have been still better for our walking if the air had been a little colder. On three several occasions, far apart from one another, we crossed the tracks of a bear going from E. to W. across the glacier; the last time the tracks were quite fresh, and there were two in company going from the Suphellenipa towards Björga, the land of the bears.

For a long time we were approaching the Suphellenipa on our left hand, and seemed never able to get past it. We crossed the head of the valley leading down to the Great Suphelle ice-fall, and made for the eastern slopes of Almenipa and the heights of the Böium Glacier, which were directly S. of us.

These heights we left on our right hand, and went nearly horizontally across the slope, with the Suphelle Glacier on our left, crossing crevasses which for the most part were fairly covered with fresh snow, but which under different conditions might have been difficult to pass.

Here above us on our right the steep glacier was much crevassed, and we met with another huge chasm, or cavern, in the glacier, similar to the one we had seen above Aamot.

After this we soon came to rocks on the eastern side of and overlooking the great Böium ice-fall, which we reached about 1.30 A.M.

On these rocks we rested for an hour and tried to sleep, without fear of cold, as the night was so mild. We waited for the dawn, so as to have better light for some troublesome rock-climbing which still awaited us. An Alpine or Norwegian hut at this spot, where there is shelter from the N. and E., and with something softer than a rock to sleep on, would have been welcome, and would have enabled us next day to round the head of the Böium Glacier, ascend Almenipa, and continue our walk down the Justedal Glacier to the S.W., as we wished to do, to the side valley which opens out at Mundal. This and other interesting excursions may conveniently be made from Fjærland. We had traversed the distance from Briksdal to the Böium Glacier in $12\frac{1}{4}$ hrs., and had rested $1\frac{1}{2}$ hr. on the way, and we had had about 8 hrs. actual walking on the glacier.

The rocks on which we rested overlooked the upper part of the Böium ice-fall towards the W., and between them and the Skjeidesnipa to the S. was a branch of the Böium Glacier some 200 or 300 ft. below us. To reach this branch of the glacier we climbed down a couloir between precipitous rocks and the edge of a small hanging glacier sloping down at a very steep angle towards the E. Finding the rocks very troublesome, and that the small glacier, although very steep, was covered with a coating of snow in good condition, we left the rocks and went well out on the glacier, so as to be quite clear of jutting points of rock and yawning crevasses below, and then turned straight down the small glacier, on which we had no further difficulty. We now proceeded to climb the Skjeidesnipa, first up a steep ice-slope where some step-cutting was necessary; when the ice became too steep we took to the arête and climbed very steep rocks on the western face of the mountain, and then crossed the arête and went along narrow ledges on the eastern face, overlooking the Suphelle Glacier, and so reached the highest point of the Skjeidesnipa. We had a very fine view of the Great Suphelle Glacier and the surrounding mountains.* From this point we turned to the S.E., but were too early to see the sunrise on the peaks and

* This view was sketched in 1870 by Professor Heim, of Zürich, and was published in the *Swiss Journal*, vol. ix. It has, a few weeks ago, been admirably reproduced in the *Aars-Oversyn for 1896* of the Bergen's Fjellmannalag.

snow-fields of the Jotunheim. We descended rapidly over a rough waste of rocks and by easy glacier-walking down to the top of the great ice-fall of the Suphelle Glacier,* and then by the usual steep and long descent down to the Suphelle farm, where, after considerable delay in catching ponies, &c., we got two stolkjærre and drove to Fjærland in time for breakfast.

THE FLUCHTHORN AND ITS NEIGHBOURS.

By W. A. B. COOLIDGE.

SOME years ago, on the publication of one of my 'Climbers' Guides,' a foreign friend is reported to have exclaimed: 'Now I see that M. Coolidge really climbs in accordance with some fixed plan: he seems to be always darting about from one part of the Alps to another, but really he is filling up gaps in our knowledge of the Alps, and his apparently aimless wanderings are governed by a carefully thought out plan.' Now it is certainly true that, for more years than I care to count, I have wandered through the Alps with a very definite plan, or set of plans, but it is scarcely necessary to add that the best arranged plans are apt to be completely wrecked by the weather. This I found, much to my vexation, was the case in the late summer of 1894. I had then meant to carry on the description of the Raetian Alps from the Splügen Pass (where my 'Adula Alps,' issued in 1893, had stopped) towards the E. and N.E., and to obtain detailed information as to the ranges N. and N.W. of the Val Bregaglia and the Engadine. I did indeed succeed very well at first, pushing on from the Splügen by the Surettahorn group to the Avers valley, exploring the peaks around that delightful and secluded glen, reaching Molins (Mühlen), on the Julier road, and even (on August 31) ascending the highest point (the Piz dellas Calderas, 11,132 ft.) of the Err range, to the E. of that village. Almer and I then meant to proceed towards the Piz Michel, and the other peaks near it, but pitiless rain set in. We spent a wretched wet week at Molins, then retreated first to Bergün (three wet days), then *viâ* Davos (where we were nearly frozen) to Klosters, in the Prättigau. Here the weather was slightly better, but such vast masses of snow lay even on grassy hills that nothing could be done, so that on September

* Professor Forbes's *Norway and its Glaciers*, p. 150.

15 we journeyed thence in one long day by rail to Bern, and soon after went into winter quarters.

My plans were only adjourned, not abandoned; yet in the early summer of 1895 it almost seemed as if the previous year's experiences were about to be repeated. On June 4 young Christian Almer and I left Grindelwald, but we only reached Klosters on July 6. Rain on the Grimsel, snow on the Nufenen, rain on the Prugel, much rain for five days at Vorauen, snow at the Club hut on the Glärnisch, stormy weather (for the third year in succession) on the Kisten Pass, and many wet days at Brigels. It was only on June 25-27 that fine weather smiled on us for a while, and enabled us to conquer the Bifertenstock (11,241 ft.), which had been defying us for three summers, and to explore the strange Kavestrau or Brigelserhörner range, successes which I have described at length in vol. xxxi. of the 'Jahrbuch' of the Swiss Alpine Club, pp. 375-382. But after leaving charming Brigels the same old story began again. Rain on the Sardona Pass, though not luckily in that quaint and stony Calfeisenthal, thick clouds on the Kurfürsten, above Wallenstadt, rain and snow on the Säntis, hard rain on our arrival at Klosters, many days after we were expected there. That wet month put us into very low spirits; but perseverance, if not patience, was to be rewarded. Fine weather favoured us during our short exploration of the peaks round the Silvretta Glacier (to which, however, we took a strange and inexplicable dislike), and also during a few days spent in the most striking range of the Rhatikon, which interested us very much. The belvedere of the Madrishorn (9,285 ft.), the charming glen of St. Antonien, above Küblis, the little Alpine inn on the Partnun Alp, the gaunt cliffs of the Sulzfluh (9,252 ft.) and the Scheienfluh (8,622 ft.), the stately portal of the Schweizerthor (7,057 ft.), the lovely Lünensee, and above all that marvellous panorama from the Scesaplana, 9,721 ft. (which included Monte Rosa and the Täschhorn, though not the Bernese Alps) will long remain in my memory. We then regained Klosters, and on July 20 crossed over to the Lower Engadine by way of the Gross Buin, a poor peak which, despite its 10,980 ft., has a made path up its W. flank. We chose Lavin as our head-quarters, in preference to Guarda (which in itself occupies by far the finest position in the Lower Engadine), because it was most convenient for the ascent of the Piz Linard (11,201 ft.), the loftiest summit of the Silvretta group. But some wet days intervened before, on July 25, we at last managed to scale it.

The view from the top is certainly very fine, but the ascent from Lavin is wearisome and stony to the last degree. We discovered, however, that the alleged Club hut at Glims has long since perished, while of the fabled path up the final peak there was no trace, no doubt because it never existed save in the lively imagination of some enthusiastic Alpine writer. We were now free to undertake the exploration of the ranges N.E. of Piz Linard, which form the proper subject of this paper.

It may be well to explain here that I was well provided—in fact, too well provided—with maps of the district which includes the Fluchthorn and its neighbours. For the Swiss side I had the Dufour map, sheet 15 (hopelessly antiquated), and also photographed copies of the then unpublished Ardez and Samnaun sheets of the Siegfried map (procured for me through the kindness of my Bernese friends from the Federal Topographical Bureau). For the Austrian side I had the ‘Ill Ursprung’ and ‘Nauders’ sheets of the official ‘Spezialkarte’ (scale $\frac{1}{75000}$), together with photographed copies of the corresponding sheets (still unpublished) of the ‘Reambulirung’ large scale Government map. But as it was a rare and startling occurrence when any two of these maps agreed as to the topography, names, or heights of the various peaks, passes, and glaciers, I was nearly driven mad, despite a carefully constructed ‘comparative table’ which I had taken the precaution of compiling. Since my journey the Ardez and Samnaun sheets of the Siegfried map have been published, and I shall quote them exclusively in this paper, as they are most admirable and include the entire scene of my wanderings, save the head of the Jamthal and the W. side of the Fluchthorn, for which the Austrian maps must be consulted. Needless to say that I had with me vol. i. of Hess and Purtscheller’s most useful ‘Der Hochtourist in den Ostalpen,’ while in some degree I had worked up the ‘Literatur’ relating to the group, in particular the excellent summary of its history given in Richter’s monumental ‘Die Erschliessung der Ostalpen,’ vol. ii.

The mention of these two last-named works reminds me that I wish to make a small personal protest against including the Fluchthorn and its neighbours amongst the ‘Eastern Alps.’ Of course there are many rival divisions of the Alps, while *any* division must be purely arbitrary, and is made simply for the sake of convenience. The view perhaps now most widely accepted is that which marks the line of division between the Central Alps and the Eastern Alps at

the Fless Pass, just W. of Piz Linard. But while this pass may very well serve to distinguish the Albula group from the Silvretta group, it seems to me to fail doubly: a small bit of the ranges bounding the Engadine (namely, the Fluchthorn and its neighbours) is arbitrarily separated from the other ranges enclosing the Upper Inn valley on all sides, while the Fluchthorn range is the natural continuation of the Albula and Silvretta ranges, and should not be cut off from them. On the other hand Mr. Ball, in my opinion, goes to the other extreme, by extending the Central Alps much too far to the E., his line following the upward course of the Adige from Trent, and then crossing the Reschen Scheideck to the Inn valley. But this line has the obvious inconvenience of including as part of the Central Alps the Ortler, Presanella, Adamello, and Brenta groups, all of which would most naturally be reckoned amongst the Eastern Alps. Of course in revising the 'Alpine Guide' I feel bound to retain there the line of division approved by its illustrious author; but personally, and for the purposes of the 'Climbers' Guides,' as well as in this paper, I prefer a modification of Mr. Ball's scheme. I think that, apart from any geological considerations, but looking at the matter from a strictly practical point of view, the following line is by far the most convenient, viz.: from Landeck up the Inn valley and over the Reschen Scheideck to the Upper Adige valley, then over the Stelvio, and down the Adda valley to the Lake of Como. In this way the four groups named above are given back to the Eastern Alps, in which most travellers would naturally place them, while the whole of the ranges enclosing the Engadine are included in the Central Alps. I freely allow that the N. limit of my scheme (from Landeck by the Paznaun and Montavon valleys to Feldkirch) is somewhat artificial, though if the line be drawn still further N., along the Arlberg railway, some essentially 'Eastern' groups would be pitchforked into the Central Alps. It is, after all, so far as mountaineers are concerned, a question of practical convenience, and, till better instructed, I shall continue to make use of my line of division indicated above.

The moral of all this is that the Fluchthorn and its neighbours form, in my eyes, part of the Central, and not of the Eastern, Alps.

I had a special appointment at Lavin for July 26 with an American friend (deeply interested, like myself, in all matters relating to Swiss history), who was travelling from Grindelwald to Lavin in five days expressly to talk over various

matters with me. Now, I and my guide arrived at Lavin on July 20, as I have said, so that there were just five days left before my friend in his turn reached our rendezvous. This was just the amount of time we required for our round to the Fluchthorn and the Samnaun valley, and back to Lavin, so on July 22 we boldly started for those mysterious regions. We chose the Jamjoch (10,112 ft.) as our route to the Jamthal Club hut, at the head of the valley of that name, for it seemed one of the plain points in the extraordinarily involved topography, and once the Club hut gained we were certain of being able to clear up matters. But July 22 was as fatal a day for us as June had been. We toiled up Val Tuoi, which we had traversed on our way down from Gross Buin, then at its head bore N.E. towards the small Tuoi Glacier, visible, as is the pass, from afar. But some way before reaching it heavy rain came upon us, and though we sat nearly four hours under a friendly rock, the rain became more and more violent, so in high dudgeon we retired down Val Tuoi, arriving at Lavin as thoroughly drenched as the most ill-humoured clerk of the weather could desire. This mishap put an end to undertaking our round before my friend joined us; but, as the sun reappeared rather late on the 24th, we profited by this surprise to excursionise to the point called Piz d'Argiglia, on the Dufour map, and Piz d'Ansatscha, on the Siegfried map, the height being given by the latter as 2,984 m. (9,790 ft.). This was a very charming and easy ascent, made through the Val Lavinuoz, and rewarding us by a very fine view, of great topographical service (8 hrs. 50 min. up, 1½ hr. down). Next day we did Piz Linard, and we were reposing from our fatigues on that most stony peak, when on the 26th, splendidly up to time, Mr. McCrackan arrived. The rest of that day was spent in delightful talk about Swiss history, both sides confessing their extreme puzzlement by the intricate tale of Grisons history. My friend turned out to be a bit of a climber, so on the 27th the three of us made a fine new route (examined on the 24th) up the Piz Fliana (10,775 ft.) by way of the Val Lavinuoz, on its S.W. The weather was extremely favourable, and I recommend this ascent (5 hrs. 20 min. up, 3 hrs. 5 min. down)* in preference to the Piz Linard. A month later it was climbed from the Val Tuoi, on its S.E., by way of the Fuorcla Tiatscha, so that a charming round may thus be made by any one staying at Guarda or Lavin. My friend

* See details in *Alpine Journal*, vol. xvii. pp. 590-1.

was rather anxious to come with us on our Fluchthorn round ; but as he did not rate his climbing powers very high, and as I at that time was under the spell of the exceeding great difficulties of the Fluchthorn, it was decided that we should part company. Later on, when we had torn the veil from that impostor of a Fluchthorn, we regretted much not having had with us a very pleasant and cheerful companion.

Mr. McCrackan left for the Maloja early on the 28th, and on the 29th Christian and I set out on our wanderings to the unknown parts of the Jamthal, a name which irresistibly suggests 'confiture' to any one whose mother tongue is English. We took the same route as on the 22nd, up the Val Tuoi (of which we were rather tired by that time), and in 3 hrs. 35 min. from Lavin gained our rock of refuge. The weather had become so shaky that at one moment we really thought we were about to be beaten back again ; but perseverance was this time moderately rewarded. In three-quarters of an hour more by moraine and the left bank of the Tuoi Glacier we gained a point high up near that glacier, so that half an hour sufficed thence up snow slopes (a little steep at the end) to attain the Jamjoch (10,112 ft.), a very respectable snow pass. But travellers are not recommended to follow the example of one of the very few English climbers who had preceded us, and who (as he afterwards wrote to me) had started for this pass from Guarda after early dinner, met a snow storm on the top, and had therefore divers adventures on the way. The pass lies between two small rock and snow humps, which seemed almost too insignificant to be worth climbing ; but later on, when we found that the higher, that to the N.W. (called the Vordere Jamthalspitze, 3,175 m., 10,417 ft.), presented rather a fine appearance from the Club hut, we were rather sorry at having passed by it. But our plan was to ascend a point somewhat further to the N.W., the Dreiländerspitze (10,539 ft.), at which the frontiers of Switzerland, the Tyrol, and the Vorarlberg meet. We had seen it well from the Tuoi Glacier, but thought that from the other side it might be less steep ; so from the pass we made a long traverse around the N. foot of 3,175 m., till the ice difficulties threatened to become serious, while maps and notes entirely failed to show us where the peak we desired really lay, so that we wisely, as I believe, returned to the slopes just below the Jamjoch, on its Tyrolese side.

Indeed, to any one who wishes to sharpen his wits by clearing up topographical puzzles I would earnestly recommend the peaks which rise round the surprisingly extensive

Jamthal Glacier: he will sadly gain much wisdom, especially if he resolutely sets aside the two latest Swiss and Austrian maps of this glacier, and tries to puzzle out matters with the older maps and all but the most recent 'Litteratur' relating to these regions. I have gone through this ordeal, and now I feel that I, in a certain degree, possess the key to the mystery, but the problem to be solved remains in my memory on a par with the early Alpine history of the Tödi, the two worst and most exhausting bits of Alpine research I have ever carried through.

From below our pass we bore round far to the right, gained a mound in the glacier in which a stick was planted, slid down the snow slope to its right, and crossed the tail of another bit of glacier to the moraine on the other side. Here we found a path which led us to the left round a hump, and brought us at last to the Jamthal Club hut (7,097 ft.), having been just 2 hours walking from the pass, *including* the time lost in looking for the Dreiländerspitz. We had hurried a good deal during the latter part of the descent, as the weather was rapidly breaking, but we luckily just got in before the rain came down in torrents. Some time after there arrived from Galtür, down the valley, an Austrian party (with some ladies amongst them), which had been drenched to the skin.

The Jamthal hut was the first I had ever visited which is provisioned according to Dr. Pott's system. I found it *most admirable* in every way. But as, despite the remarks of Sir Martin Conway,* this system of provisioning Club huts may be as little known practically to many of my readers as it was to me before July 1895, I venture to give a few details about it. Of course any party may order from the central dépôt a basket of provisions, &c., for itself, but I had experience only of the provisions found in the hut. There were several great baskets containing all sorts of good things, *e.g.* compressed tea, coffee, cocoa, chocolate, sugar, sardines, many kinds of soup, a great variety of excellent potted meats, beans, sausages, cognac, rum, &c. In the small cellar there were very good local red and white wines, beer, mineral waters, and even champagne. Bread was not supplied, its place being taken by a very palatable kind of Albert biscuits ('Touristen' or 'Alpenverein' biscuits). There was also on the list a mysterious kind of drink (I unluckily forget its name), which had been so popular that at the time of our stay no more, unluckily, was to be had! A paper block is

* *The Alps from End to End*, pp. 344-5.

provided, consisting of a number of printed lists of all things to be had, with the prices thereof. On leaving, a party has simply to enter on one of these lists all they have taken, to sign their names (and Sections), and to wrap up the money in the paper list (torn from the block), placing it in the locked box provided for that purpose. The great convenience of this system is that constant journeys down to valleys to obtain provisions are not necessary, as the landlord of the nearest inn renews the supplies in the hut at fixed intervals. Continuous Alpine journeys may thus be easily carried out. Each traveller pays a moderate fee for spending the night in the hut (members of the Club pay half price). Of course the till may be robbed, as happened shortly after our visit to the Heidelberger hut, but such occurrences are rare. The system has recently been tried at the Oberaarjoch Club hut, in Switzerland, but I have not heard with what success. But, as the Swiss Club huts are often higher and more difficult of access than those in the Tyrol (which are frequently reached by a mule path), it seems harder to introduce this most practical and convenient system into Switzerland. Yet I feel certain that a great future awaits it, and it might easily be modified in detail so as to suit different conditions. The hut itself includes a special room (upstairs) for ladies, and is most conveniently supplied with everything one could desire, even with some luxuries. An alarm clock and many clean sheets may perhaps be reckoned under the latter head. On arriving we had opened the house with the key which I had obtained as a member of the German and Austrian Alpine Club. We found a shepherd lad close by, who was hugely delighted by us, first for our inability to understand that complicated Austrian coinage, and then because, as we explained to him, I had not been in the Tyrol for 19 years, while Almer had never been there at all. On learning that we did not intend to descend to Galtür he expressed himself scornfully as to our experience in the Tyrol, which was to be limited to this comfortable hut.

The hut is situated at the head of the Jamthal, a little distance above the nearest Alp huts, and in full sight of the three-peaked Fluchthorn, which is seen through a glen on the east. It was in order to ascend this peak that we had come to this Club hut. The name of the mountain had been familiar to me for many years, but I had somehow got the idea into my head that it was extremely difficult. This impression was no doubt in great part due to a study of the classical narrative by Herr Weilenmann of his first ascent of

the peak in 1861, originally published in vol. iv. of the 'Jahrbuch' of the Swiss Alpine Club, pp. 155-205,* and reprinted in vol. ii. pp. 47-147 of that climber's 'Aus der Firnenwelt.' Indeed, one finds but very rare notices of this peak in non-Austrian Alpine periodicals, and it is hard to find any other full account of the ascent, except in the Alpine publications issued in Austria. Now Herr Weilenmann, as so often happens to early explorers of a district, had attacked the mountain from what proved to be the hopelessly wrong side (the north), and the difficulties encountered by him on his attempts almost made one of his readers forget that after all he had turned the peak on its south-east flank, and had finally attained its summit by the now ordinary route from the south. Yet from the 'Fremdenbuch' in the Club hut it was easy to see that the peak was very frequently ascended thence, so that we resolved to have a try, though ready to turn back if it proved to be too difficult for a party of two.

We had a very comfortable night, but the rain continued without intermission. The Austrian party got up very early, being bound for the Augstenberg (3,294 m., 10,610 ft.), and wishing to avoid soft snow. But they had to go to bed again in despair. Some hours after they rose again, and as the rain had ceased, though there were still many clouds about, they set off for the Lower Engadine by way of the Füttschöl Pass. After their departure we got up in our turn, and breakfasted leisurely. Soon the clouds began to break; presently the sun came out, and the weather seemed to have exhausted its fury and rage against us. We soon decided that we would at any rate explore the Fluchthorn, perhaps even climb it, and this we settled all the more readily because we knew that the Heidelberger Club hut in the Fimber valley (whither we were bound) was also 'provisioned' à la Pott, so that we had not to bother ourselves about that matter, as in Switzerland. Our experiences can be well followed on the splendid view of the west side of the mountain which faces p. 20 of vol. ii. of the 'Erschliessung der Ostalpen.'

It was 8.55 A.M. on July 30 when we locked up the hut and set forth to scale the 4,000 ft. odd which separated us from our peak. In our extreme anxiety not to fall into any mistake, we crossed to the right bank of the torrent by the bridge, but carefully avoided a conspicuous zigzag path (the usual way) that seemed to lead up to a belvedere opposite, named Gamshorn

* See *Alpine Journal*, vol. iv. p. 207.

(9,571 ft.). Instead we took the path towards the Füttschöl Pass along the right bank of the same stream, but at the point some way up the glen where it again crossed to the left bank we abandoned it, as the glen trended away to the S.E., and so would lead us away from our peak (1 hr. 5 min. from the hut). Accordingly we struck up to the N.E., ascending steep grass and shale slopes, and then a long moraine on the *left* bank of the Lower Fluchthorn Glacier (this is its name on the 'Reambulirung'), thus attaining in 40 min. from the 'Thalweg' a point whence we could see our mistake, as the great track on the snow came from the *right* bank of the glacier. However, no great harm was done, as we crossed the level glacier and soon joined the aforesaid great track. It continued up the easy rocky slopes on the left bank of the steep tongue of ice (well seen on the plate referred to) which descends from the Upper Fluchthorn Glacier. Nothing could be easier than the way so far, but the cliffs of the Fluchthorn still frowned above us, and we still imagined they held terrible secrets. The Upper Glacier was soon reached, and then an ascent to the left, at the last rather steep, led us (1 hr. 25 min. from the spot at which we took to the Lower Glacier) to the 'Sattel' at the S. foot of the final peak. I had imagined that this 'Sattel' was on the main N.-S. frontier ridge, but it is really only on a great spur which stretches away on the main ridge in a S.W. direction. A descent of a few steps led to a snow band, by which a *path* (a huge surprise to us) was gained, which led us without any difficulty up easy stone-strewn rocks to the summit of the Fluchthorn (11,165 ft.) in 35 min. very easy going from the 'Sattel.' We had thus taken but 3¾ hrs. walking from the Jamthal hut to the summit of the peak which we had dreaded so much. Our immense surprise at this easy success was mingled with regret that Mr. McCrackan was not with us to share in our triumph.

The weather had now cleared off completely, and the prospect was most extensive and magnificent. To the E. there rose many peaks still unknown to us, so that we paid more attention to those to the W., which we had recently been exploring. The impression made on me by the panorama was so great that I quite forgot to note any details, save that both the Jamthal and Heidelberger Club huts were visible at the same moment. In the 'Fremdenbuch' in the cairn we found many entries, but I only lighted on a single English entry, made by two Oxford acquaintances of mine. It was only later that I learnt that the one Englishman who really

knows these regions had been defeated no less than four times on the peak by bad weather, whereas here were two strangers approaching it for the first time who had met with no resistance. Such is the fortune of war.

We spent 50 min. on the top, which we reluctantly left at 2.20 P.M., as we could not believe but that the way down to the Heidelberger hut (which *seemed* to be just below us) was more difficult than the ascent from the W. had been. In 20 min. we regained the 'Sattel,' then, guided by old tracks, worked over to the next depression to the right, on the same S.W. buttress, and then merrily raced down easy rocks and snow in a great couloir straight to what the 'Reambulirung' calls the 'Kronenferner,' the glacier just S. of the Fluchthorn. A short walk over it brought us (in 50 min. from the 'Sattel') to the Zahnücke (9,712 ft.), a broad snowy opening between the Fluchthorn on the N. and the jagged crags of the Zahnspitz on the S. The afternoon seemed to grow finer and finer, and it was hard to tear oneself away from the glorious scenery which surrounded us on every side. Nor was it really necessary, for the descent on the E. side proved as easy as possible. In 10 min. we cleared the small glacier, quitting it on its left bank, and after that snow, stones, and grass led us down into the vast stone-strewn plain of the Fimberboden, in the midst of which, on a slight mound, stands the Heidelberger Club hut (7,431 ft.). We had been but 2 hrs. 20 min. walking from the summit of the peak, which we had thus traversed from one hut to another in 6 hrs. 5 min. walking; yet we had not hurried after the day made up its mind to be really fine.

The Heidelberger hut also belongs to the German and Austrian Alpine Club, but by a curious anomaly (doubtless due to some unrecorded struggle between rival herdsmen) the whole of this nearly level upper bit of the Fimber valley belongs to the village of Remüs, in the Lower Engadine, so that the hut, though owned by a foreign society, stands on Swiss ground. The hut is rather smaller than the Jamthal one, but it is also very conveniently fitted up, and 'provisioned' *à la Pott*. We settled ourselves down very comfortably, and were rather amazed at suddenly hearing voices outside, and the entry of another party. This consisted of two professors from Innsbruck, with Franz Oesterer, the blacksmith of Ischgl, as guide, the said blacksmith being so extraordinarily like my old friend François Dévonassoud, of Chamonix, that I very nearly addressed him as such. We all soon fraternised and spent a very pleasant evening together, watching a marvellous

sunset on the Fluchthorn, which the Innsbruck party hoped to ascend next day. The blacksmith became very friendly when I uttered the name of 'der Butler,' with whom he had travelled (probably the sole English employer he had ever had), and whose name is an open sesame in these regions. Almer told me next day that the blacksmith had questioned his foreign colleague very closely as to whether there were higher mountains in the distant Bernese Oberland than here. Almer amused himself by explaining that the Club huts there were sometimes nearly as high as the Fluchthorn itself. This immensely interested the blacksmith, who long sat listening with the greatest reverence to the words of wisdom which fell from the lips of one who came from such an astonishing district.

To our surprise and regret the morning of July 31 was far from being as fine as the glorious evening of the 30th, clouds hanging over the Fluchthorn, so that I fear the other party did not have our luck as to a view, while we more than ever congratulated ourselves on having just saved the peak out of the fire. As we had only to reach the Samnaun valley that day, we did not set off till 7.40 A.M. We mounted up grass slopes in a north-east direction, traversed several shaly hollows, and finally reached a gap (1 hr. 50 min.) which overlooks the glen through which the path descends on the west side of the Zebles Pass, and which is no doubt the Fuorcla Roz (2,792 m.). Thence we followed a shaly ridge in a more or less easterly direction, passing in 10 min. a great cairn, and finally attaining in 1 hr. from the Fuorcla the double-pointed peak called Vesilspitz, or Piz Roz (10,220 ft.). I had selected this point partly as it seemed to lie in the straight way between the Club hut and the Samnaun valley, partly in order to examine the rather lower Vesulspitz (10,145 ft.) on the north. But I certainly never expected to find myself overlooking the whole valley of Samnaun, which lay unrolled at our feet, the hamlets of Samnaun and Compatsch being well seen deep down in the green trench. The Vesulspitz was soon identified, and it was clear to me that my proposed 'Climbers' Guide' for these districts need not go north of the Zebles Pass, as that part of the range does not present the characteristic features of the High Alps. The Fluchthorn was capped by clouds, so that our poor friends had had all their trouble for nothing. We visited both points of our summit, which seems to be very rarely ascended, though there are two cairns on it; 1½ hrs. were spent very pleasantly up there. We first descended by many stones between the

small glacier on its north-west flank and its north ridge for a considerable distance towards the Fimberthal side of the Zebles Pass (8,350 ft.), then crossed the north-west ridge, and went down by more stones and grass to the path on the Samnaun side of that pass, reached (50 min. from the summit) near a sign-post a little way from the frontier ridge. We had then only to follow this path, which is marked out by high poles, and make a great bend towards the north-east before descending steeply to the level of the Samnaun valley. From this uppermost hollow the path led through meadows (whereon we found seated several Austrian parties bound for the Zebles Pass) to the first hamlet, called Samnaun (55 min.). As this village is at the mouth of the Val Maisas, up which our next day's route lay, we wished to sleep here; but the old witch who keeps the small inn assured us (though we remained incredulous) that her two beds were already engaged. She, however, consented to sell us a bottle of wine, which we consumed in the small 'Gaststube.' On one of its walls hung an engraving with a London imprint, which represented, if I remember rightly, a General Keith, who had served in the Napoleonic wars, and had oddly found a resting-place in this remote valley. Our witch assured us that Compatsch (the chief village, with the parish church) was only $\frac{1}{2}$ hr.'s walk away. But it took us 55 min. of not very slow going to reach it by a path along the stream, so that we placed less confidence in our witch than ever. But it was worth while walking a little further to see Compatsch (or Cam-patsch), one of the most remote villages conceivable (5,633 ft.). The small inn, Gasthaus Piz Ureza (from a small point of that name just on the north), was clean, but the food seemed poor after the luxury of the two 'provisioned' Club huts whence we came. But, as the landlady explained, she had ordered provisions 5 weeks before, and they had not yet arrived! The hamlet is only $\frac{1}{4}$ hr.'s stroll from the Tyrolese frontier, the path leading through the thickly-wooded gorge of Spiss to the Inn valley, below the Finstermünz gorge. The valley is thus an 'enclave' in Austrian territory, so that recruits from it bound for their depôt at Coire are obliged to cross the Zebles Pass to the Paznaunthal, and then the Zeinis Pass to the Montavon, in order to gain Bludenz (all the way in Austrian territory), whence they can gain Coire by rail. It is said that by special permission of the Austrian Government they are allowed to make this journey in full uniform, with their arms. But the danger cannot be very great, for at the last Swiss census there were but 317 inhabitants in

the entire Samnaun valley. All the inhabitants are now Romanists, the few Protestants having emigrated. Up to the beginning of the present century the tongue spoken in the valley was Ladin, but now this has been entirely superseded by a Tyrolese variety of German. By an extraordinary anomaly (the historical explanation of which has hitherto eluded me) Samnaun formed, from the sixteenth century to quite recent times (1850), one 'Hochgericht' or bailiwick, of the 'Gotteshausbund' (one of the Three Leagues of Rætia), together with not only its neighbours, in the Lower Engadine, Remüs and Schleins (it still forms a 'Kreis' with them), but also with far distant German-speaking Avers, and Ladin-speaking Bivio-Stalla. It is, however, difficult to understand what common interests these five districts can have had, as the two last named are far away on or just west of the Julier road—that is, near the extreme west end of the Engadine.

These historical considerations had induced me to visit this isolated valley, besides the attraction which 'l'inconnu' always exercises upon me. In the 'Fremdenbuch' of the little inn there were only three or four English names, these stray visitors being bound over the Zebles Pass. But 'der Butler' has since told me that in 1882 he came thither from the Paznaun valley by the Fimberthal and the Viderjoch (8,991 ft.), north of the Greitspitz.*

There was much rain during the night, and when we started at 8.45 A.M. only on August 1, the fourth day of our round, the weather was still threatening. It was with great regret that I said 'Auf Wiedersehen' to the peaceful little village where we had spent a few hours, promising myself to return thither some day when utterly weary of the outer world. In 55 min. we regained the hamlet of Samnaun, where our reproaches to the old witch were greeted by her with scornful laughter. We now turned due S., crossed the

* For more detailed notices of Samnaun see the *Neue Alpenpost*, vol. iii. (1876), pp. 169-71, 185-7, 201-2; the *S. A. C. Jahrbuch*, xx. pp. 223-31; the *Schweizer Alpenzeitung*, vol. v. pp. 175-6, 188-90, and 193-7; *Zeitschrift d. D. u. Oe. A. V.* vol. x. 261-4. In case any of my readers care to consult the older writers I give the following references: U. Campbell, *Topographia Rætiae* (written in 1572), pp. 7, 228-30, 326 of the 1884 printed edition; Fortunatus à Sprecher, *Pallas Rætiae* (written in 1617), pp. 342-8 of the Elzevir edition of 1633; and N. Sererhard's *Einfalte Delineation aller Gemeinden gemeiner dreien Bünden* (written in 1742), part i. pp. 40, 101, 104-5 in the 1872 edition.

Maisas torrent, and mounted by a rough path along its right bank to the stony hollow which forms the head of the Val Maisas. Here we caught sight of a stout Austrian traveller and his guide, who had reached Compatsch the night before from the Paznaun valley, over the Hexenkopf, but who were so weary that they were unable to address us, though that night there were only our two parties in the inn. They were bound for Remüs over the Muttler, and foolishly chose the direct but longer way straight up the endless steep 'Geröll' slopes on its north-west flank. We too were bound for Remüs, but, as we hoped to climb the Stammerspitz (10,629 ft.) on the way, we made straight for the pass between it and the Muttler. By stones on the right bank of the small but steep Maisas glacier we gained its upper level surface in 2 hrs. 25 mins. from the village of Samnaun, and in 25 min. more the Maisas Pass (9,357 ft.), by crossing the glacier in a south-west direction, and a steep 'Geröll' slope. As this pass seems but little known to travellers, though it is the easiest and most direct way from the Samnaun valley to the Lower Engadine, it may be worth while to say that it is just east of a great rocky tooth, and that the village of Samnaun, as well as the Fluchthorn and the Stammerspitz, is visible from it. The latter summit, however, did not present the same striking appearance as from the Vesilspitz on the north-west the day before. It was, too, obvious that from our present standpoint a long traverse across steep slate slopes (most detestable in themselves) would be necessary, while the weather was rapidly spoiling. Hence, as we desired to reach Remüs that night, we gave up our projected ascent. Almer, however, urged that we should at least walk up the Muttler (10,821 ft., and 132 ft. higher than the Stammerspitz), which we accordingly did very leisurely in 1 hr. 10 min. by the great and easy west or south-west shale ridge. But by the time we gained the two cairns (one big and one small) on the summit the clouds had closed in around us, though on the way up we had seen all the neighbouring peaks. There was no sign of the stout tourist and his guide, nor could we hear any sound announcing their approach. A break in the clouds, however, soon explained matters, as we caught a glimpse of them both peacefully slumbering at the foot of the great slate slopes. As we learnt later they had found them very wearisome, at which I do not wonder, while they envied us for taking the better route, although none of the four of us had ever been in those parts before. Twenty minutes in thick clouds were enough for us,

especially as the weather got worse and worse, so we went back to the pass in 35 min., dined under a great rock, sheltered from the storm wind, and at 4 P.M. started down on the way to Remüs. From the pass it is best to bear to the left over a spur, as this way is less stony than that to the right. In either case there is no difficulty, and the grass is soon reached. Here the great thunderstorm which had been long brewing burst in all its fury upon us, and soon we were thoroughly drenched. This made us run very fast down the steep grass slopes on the left side of the Griosch or Tiatscha glen, but the hail and rain had moderated by the time we got to the Pradgiant chalets (1 hr. 10 mins. from the pass). While we were flying down the glen we had heard a great shout behind us, and on looking up caught a glimpse of the Austrian and his guide, who were coming down the west ridge of the Muttler, and were trying to cheer themselves up by crying out to us far below. A pleasant walk (bearing to the left) led down through woods in 20 min. to the broad hay-cart track high above the left side of the Val Sinestra. The weather held up a little, so that this part of the journey was exceedingly agreeable. The road is carried over meadows and through forest, while hay carts abounded. A stroll of $\frac{3}{4}$ hr. brought us to the large village of Manas, where we sought in vain for a 'Wirthschaft,' wherein to quench our thirst, but in vain. I was told afterwards, though it seems scarcely credible, that the inn is only open on *Sundays*! So we went down the great zigzags of the road to Remüs ($\frac{3}{4}$ hr.), a terraced village, whereat we were taken in, after some hesitation, at a small pink-walled restaurant on the Engadine high road itself. Once the landlady got over her first alarm at our wet and miserable appearance, she treated us very well. A couple of hours afterwards, as we were at supper, the Austrian and his guide, disdaining the attractions of a larger inn near by, also entered our humble home for the time being, and we all had a very merry evening together, talking over our small adventures and odd experiences at Samnaun. Next morning we all went different ways, Almer and myself driving up to Lavin, which we reached in $2\frac{1}{2}$ hrs., and soon the familiar appearance of the Hôtel Piz Linard made us feel as if Jamthal, Fluchthorn, Vesilspitz, Samnaun, and the Muttler had all been but a quaint kind of dream.

Our explorations in those regions had thus prospered very much, but, as they were now ended, we drove next day over the Albula to Bergün, where we took up our quarters, not without qualms, remembering our sad experiences there the

year before. But the weather, though generally very cold and stormy, allowed us to carry out our plans around that village. From the new Kesch Club hut (on the Fuorcla d'Alp Fontauna, and strangely closed with the German and Austrian Alpine Club key) we traversed Gross Piz Vadret (10,584 ft.) on August 7, but I recommend no one to take this hut as a starting point for this ascent, as a *descent* of 1,300 ft. to the Fontauna chalets in the morning is scarcely more pleasant than the *ascent* of the same in the afternoon. We took 5 hrs. 25 min. walking up from the hut, and 3 hrs. 55 min. back, crossing the gap between the two summits of Piz Vadret, ascending the higher in rather over 1 hr. from the Puntota glacier, and descending thence by the usual great couloir to the Vallorgia glacier in 1 hr. Next day (August 8) we did Piz Kesch (11,228 ft.) in 3 hrs. from the hut (1 hr. 50 min. down), but, though from the summit we saw the bright blue sky overhead, pitiless clouds surrounded us during the entire expedition. Snow was falling as we regained the hut, but after a leisurely dinner things improved and we regained Bergün in 2 hrs. 35 min. walking. On August 10 (a fine day) we took the Tinzenhorn (10,330 ft.) direct from Bergün, and on August 13 treated the Piz d'Aela (10,959 ft.) in the same way, though with worse weather. The former summit took a little longer, and was harder (in its upper bit) than the latter, though I had heard much of the horrors of the Aela. On the way up the Aela we saw 28 chamois together. At Bergün there is a house insured in a Scotch insurance company, while I forgot above to note that the inn at Compatsch is insured in a *Norwegian* company—modern activity having thus penetrated even to high Alpine valleys. On August 14 we drove round to Savognino, on the Julier road (between Molins and Tiefencastel), whence on August 16 (a very cold and bleak day) we climbed Piz Michel (10,378 ft.). This was a memorable ascent to me in several ways. In 1867, 28 years before, I had, as a mere lad, made the first ascent of this summit, and on it had experienced the one mishap, a slight one only, which has ever yet befallen me in the Alps.* Our ascent in 1895 marked the completion of our 'plan of campaign' for that year, which was thus at last linked on at this point with that of 1894.

On August 17 began that wonderful autumn of 1895, which Almer and I enjoyed to its full, 'wandering' in holiday fashion

* See *Alpine Journal*, vol. iv. p. 51, vol. v. p. 206.

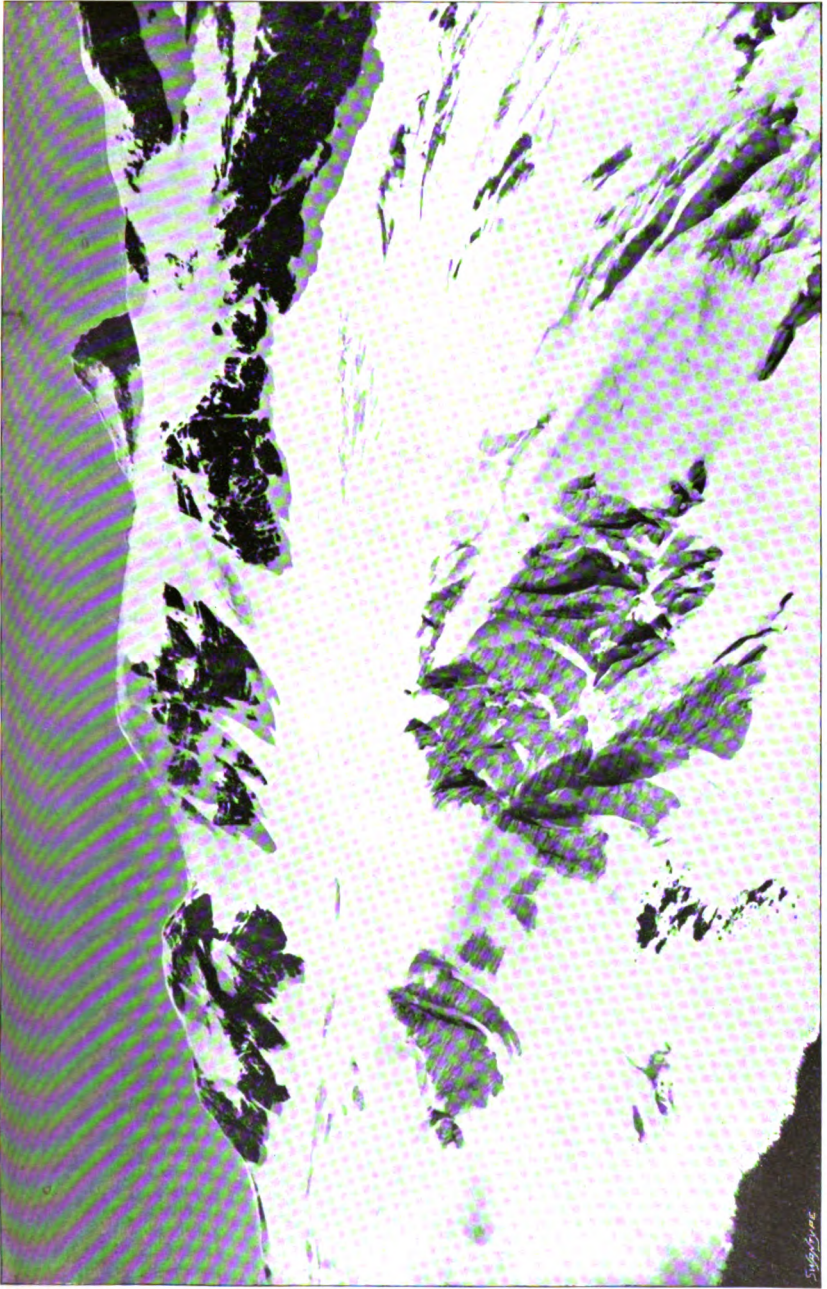
through many lovely valleys south of the Rhine and Rhone valleys, till on September 1 we emerged into civilisation at Binn. After a short stay there I went for a short run in the Dauphiny, which I described briefly in the 'Alpine Journal,' vol. xvii. pp. 555-8. On September 21 I met Almer by appointment at Bern, and we spent the day at the very interesting Agricultural Exhibition there (his first experience of that kind of thing), returning wearied to Grindelwald that evening. We had opened our season of 1895 by climbing on May 29 the Eiger Rothstock (2,668 m., 7,441 ft.), west of the Eiger. So, not unfitly, we ended that fine season by an ascent (on September 26) of the Eiger itself, having with us Almer's eldest boy, 'Christian III.,' whose second 'grande course' this was. But though 1895 will always remain full of pleasant memories for both Almer and myself, none is pleasanter, and upon no part of our prolonged wanderings that summer do we look back to with more agreeable recollections, than the four days we spent around the Fluchthorn and its neighbours, in pursuance of our 'plan.'

AN ASCENT OF THE GLÄRNISCH.

By WILLIAM CECIL SLINGSBY.

IN each group of mountains in the Alps nature has provided one or more peaks—apparently for a most excellent purpose, namely that of affording for her lovers remarkable views from their summits. These peaks are the watch-towers of the Alps, and the views comprise peeps of the vales, the plains, the rivers, also of villages and peaceful homesteads, as well as of the sterner scenes above the snow line. It does not follow that these views are the finest that can be obtained; indeed, they may not be half so glorious as the view of Mont Blanc from Le Jardin or from Le Grand Plateau, nor half so beautiful as dozens of notable views of the Faulhorn, Gorner Grat, and Monte Generoso type, but they certainly appeal to us mountaineers with a force not to be equalled by any which can be seen by merely walking on a footpath up to the top of a hill which is probably desecrated by a drinking booth.

The peaks must, of necessity, have narrow rock crests or snow crowns. They are placed, as the Aiguille de Trélatête and the Eiger, at the corners or ends of the main ranges, or of those lateral ranges which, fortunately, are so numerous in the Alps; or, like the Dent d'Hérens and the Tödi, they form



centres from which several valleys radiate ; or, as the Galenstock, they head some great valley ; or, like Monte Leone, they stand as sentinels guarding some great gap in the main chain ; or they tower, as Monte Viso does, head and shoulders above their neighbours. But in every case they invite, nay, they command mountaineers to touch their proud crests.

In addition to the gratification of his æsthetic tastes, which are at least as refined and as appreciative of the treasures of nature as those possessed by other travellers, the climber requires to add, or at any rate feels happier if he can add, to his topographical knowledge, and in doing this he dearly loves to recognise and to greet, no matter at what distance, the forms of old friends, perhaps in new garb, amongst the mountains around him.

I need hardly point out that the Glärnisch* ('this great mountain, perhaps the most remarkable in Switzerland of those not immediately connected with either of the main ranges of the Alps,' says Mr. Ball) has claims, which cannot be disputed, to be included amongst the type of mountains which I have briefly described. Most of us have seen this mountain from some peak in the eastern Oberland, from one of the Maderanerthal heights, or possibly from the Lake of Constance. Many of us have resolved to climb it some day. How few modern English climbers have acted upon this resolution a glance at the 'visitors' book' in the Glärnisch Club hut will reveal, and it will be a surprise to the reader. The 'Alpine Journal' has no record of any ascent in the range since that described by Mr. Howells in vol. i. p. 120. Though this was a much more heroic expedition than that made by our party last summer, they contented themselves with climbing Der Ruche, the second highest point in the range, and left the highest alone. This, however, has very frequently been climbed by Swiss and German mountaineers. In 'Peaks, Passes, and Glaciers,' first series,† there is, of course, an admirable paper by Mr. R. W. E. Forster on the mountains and district generally about Stachelberg, but, as he did not climb the Glärnisch, he said little about it. All the Swiss guide-books that I have seen describe the range very well, and give details about the canton of Glarus, which in general interest, past and present, will vie with any canton in Switzerland. These I will not encroach upon.

The position of the Glärnisch is admirable as a point of view, as any one can see who looks at it on the map. It is an

* *North Switzerland*, p. 180.

† Pages 371-398.

exceedingly interesting mountain in many ways. It is the most northerly snow mountain in Switzerland, and possesses a large, gently inclined, and relatively high snow-field, which from a distance appears to be much larger than it is in reality. It rises with a series of grand precipices to a height of 8,004 ft. above the salmon * river at its base, the merry and swift-running Linth, and with still grander precipices to a height of nearly 7,000 ft. from the Klön See, and shows a noble profile to the people in Glarus, though hardly of the form portrayed in Scheuchzer's 'Itinera Alpina,' p. 172. It towers superbly above its neighbours, and, like a wise and beautiful woman, it makes the most of the charms with which nature has so liberally endowed it.

All the poetry and special beauties of the best limestone scenery so dear to us in the North of England are present on the Glärnisch. Below are the brightest of green meadows, lovely beech woods, and rivers; then come steep grey rock escarpments dotted with dark yews, white and yellow saxifrages, and green or golden mosses. With these alternate terraces—some broad enough to afford pasturage for many cattle and sheep amongst the pink primroses and white parnassus with which the grass is embroidered, others merely narrow ledges or shelves, which now and then disappear entirely into the face of the rock, and which, reappearing, can be traced for miles round the massive buttresses, deep ravines, and steep rock-faces. Think of the beck clear as crystal, some gushing out of dark caves, others springing up on the roadside from under the roots of an ash or a beech tree, each one the favoured haunt of some pair or pairs of water ouzels. This, one of the most lovable of all wild birds, is called in Norway 'Fosse Kongen'—the king of the waterfall—a most suitable name. Then, too, look at the petrified mosses, branchlets, and leaves! Where can you see such streams as on the limestone formation?

All the lines of the Glärnisch show strength and beauty; from no point of view has it the appearance of a weakling, and yet the height of this mountain, expressed in feet, does not require the use of five figures.

The view of the range from the cosy Hotel Klönthal at Vorauen has but few rivals of its kind in the Alps. Beyond lovely green meadows is to be seen one of the grandest per-

* *Coxe's Switzerland*, 1789, vol. i. p. 48: 'They (the salmon) are taken in these distant parts in September and October, and about the size of seventeen or twenty pounds weight.'

spectives of massive buttresses, pine-fringed at their base, then green, and lastly grey or white, which carry the eye from the shoreless waters of the Klön See to the grim battlements of Der Ruche, 6,904 ft. above the lake. The clouds play—rather too often, we thought—at hide and seek in the deep ravines, and mingle with the spray from many a wild cataract. Everywhere too are lovely foregrounds to be found. This scene was most successfully painted by the artist of our party, who, for a few days, was unfortunately not well enough to climb, but in consequence much enriched his portfolio.

In addition to the usual Swiss flora nearly all the best limestone flowers and ferns grow in rich profusion in the Klönthal, and together they make a noble show.*

Our large party arrived at Vorauen by different routes and at various times. Some came over the Pragal Pass, others by rail to Glarus, and from thence by carriage. My wife and I were among the latter, and drove up the lovely glen from Glarus on the evening of June 25, and on our arrival were told that the Glärnisch was still unclimbed by our vanguard.

Next day the rain allowed of nothing but short walks, which, however, are most beautiful and interesting around Vorauen; and the walkers returned with bright nose-gays,

* Herr M. Brunner-Legler, the proprietor of the Glarner-Hof in Glarus and of the Hotel Klönthal at Vorauen, a most obliging man and a great lover of nature, frequently spends two or three weeks at Vorauen in the winter, when he feeds the wild birds until they become quite tame, and he wanders far on to the hills with his St. Bernard dog, his only companion. He is also very fond of flowers and sent me a long list of the plants which grow in the Klönthal, from which the names of the following have been selected by a botanical friend, who, however, says, 'I see nothing very wonderful among them, though of course there is abundant scope among the names given for a glorious display of bloom:—*Salvia glutinosa*, *Astrantia major*, *Gentiana verna* and *excisa*, *Verbascum thapsus*, *Ranunculus aconitifolius* and *alpestris*, *Pinguicula alpina*, *Eriophorum angustifolium* and *alpinum*, *Lonicera cærulea*, *Dentaria polyphylla* and *digitata*, *Lunaria rediviva*, *Pyrola uniflora* and *secunda*, *Cephalanthera rubra* and *xiphophyllum*, *Cypripedium calceolus*, *Polygonatum multiflorum*, *Ribes alpinum*, *Erica carnea*, *Rhododendron hirsutum* and *ferrugineum*, *Dianthus silvestris*, *Hypericum coris*, *Saxifraga Aizoon* and *varians*, *Digitalis ambigua* and *lutea*, *Teucrium montanum*, *Primula auricula*, *Oxytropis campestris*, *Astragalus alpinus*, *Hedysarum obscurum*, *Epilobium Fleischeri*, *Galium helveticum*, *Linaria alpina*, *Silene acaulis*, *Soldanella alpina*, *Globularia nudicaulis* and *cordifolia*, *Lycopodium annotinum*.

comprising gay orange lilies, ladies' slipper orchids, globe flowers, columbines, pyrolas, yellow foxgloves, and lovely spikes of *Anemone narcissiflora*.

As the weather in the evening appeared more hopeful, it was decided that the following day three of the party should be told off to go to the Swiss Alpine Club hut, to sleep there, and to climb the Glärnisch on the second day. Messrs. Horace Walker, Ellis Carr and I were deputed to sacrifice ourselves to this call of duty, and to this we consented, but only on the condition that we were to be accompanied as far as the highest chalet by the rest of the party.

The walk up the Klönthal and the Rossmatterthal was very pleasant, and, as we had ample time, we strolled along leisurely. The latter valley, contracted at first, expands further on to a great width, and is headed by half a dozen wild glens and fine coves or bays in the hills, such as are common in the limestone. These have at their head steep cliffs which run out on the sides of the glens into a series of rock escarpments and green terraces. The path up to the Club hut mounts two of these terraces, and in turn is carried along the edge of each for some distance; and a very pretty path it is too.

We parted from our friends at the chalet Käsern with much regret, and were assured by Melchior Anderegg that fine weather awaited us on the morrow, though then the Bächistock, the highest peak, was enveloped in clouds.

Soon we came to steep ground and zigzags on the path. We found here and there amongst the crags *Lonicera cærulea* in full flower; *Daphne Mezereum* also grew in rich profusion, and filled the air with delicious fragrance; and at the very edges of the terraces *Primula auricula* formed a most lovely yellow fringe, whilst the whole ground was carpeted with the brightest Alpine flowers.

Above the path, on the north side, are some most fascinating ledges, overhanging crags, wild rock towers, and a promise of many wild caverns, which I longed to explore. Monsieur Martel has made at least one visit to Canton Glarus, and, sooner or later, will probably explore some of its caverns.

On our arrival at the Club hut we received a hearty welcome from the woman who acts as caretaker there during the summer months, and, with but little addition from our own supplies, she provided us with a very fair dinner. The hut, which was beautifully clean, has two sleeping-rooms, as well as a kitchen and feeding-room, and is perched like an eagle's nest on the edge of a crag, affording an excellent view of

green alps and of the Böser Faulen, then in snowy garb, a remarkably fine peak, quite of the aiguille character.

With the exception of a porter, who came with us from the last chalet, we were the only visitors. This was really great luck, as it was the end of the week, and during fine weather it often happens that several parties come up from Glarus, Zürich, and South Germany, in order to spend the Sunday in climbing the peaks, or in gathering the edelweiss, an act forbidden by law in this canton, and therefore, like poaching, a sport naturally invested with a special charm.

A playful kitten was by no means the least important being in the hut, and some goats were tethered outside. The night was most lovely, there was a very keen frost, and though we each had a couple of rugs we felt cold. During the following month we slept in many huts, but very rarely had any frost at all. On three consecutive nights which we spent at the Concordia the snow outside never hardened. The result can easily be imagined.

Next morning, June 28, we left the hut at 3.55, and followed a steep track up the side of another wide cove to the wall at its head. This is skilfully turned by the path. At the top we reached a snow-field, which at first we thought to be the Glärnisch Firn, especially as in a thin mist it looked very large, and a well-marked track on the snow tried to lure us on. However this did not agree with the map, as it was too far north. After looking about a bit we saw scratches below the nose of a projecting crag, and after following a very pretty ledge we came in a few minutes to the north edge of the glacier itself, a little above its snout. The first snow-field, though then pretty large, is not glacier, and most probably nearly disappears during the summer months.

Then, for the first time, the line of peaks which form the rim of the basin containing the Glärnisch Firn broke through the morning mists. Though the Bächistock, or Hinter Glärnisch, the highest peak of the range, was our goal, the majority of climbers ascend Der Ruche, the second highest, on account of the admirable view of the Klön See which is afforded from its summit. This peak and the Vrenelisgärtli form the northern rim of the great snow basin.

On looking towards our peak we noticed across the glacier a line of high crags, at the top of which lay a still higher portion of the snowfield. This line was intersected by two glacier tongues or broad couloirs.* The eastern one was the

* These are well shown on the accompanying illustration, which

easiest, and is, as we afterwards heard, the route usually followed, but as the western, that to the right hand, though rather steep, was evidently shorter and well within our powers, we chose it for our highway.

We were soon over the glacier, then Carr cut a short staircase up steep snow at the foot of the couloir, and, after mounting it, we turned to the rocks on the W. side. These brought us pleasantly enough to the upper snows. When there, by some uncanny atmospheric means, to the E. of the rock peak which we had decided to climb, a snowy dome seemed to rise to a great height through the thin mist which was just then drawn over the range, so we reluctantly bent our steps towards it. After a quarter of an hour's trudge the mists blew away, the high snow dome, a mile away, resolved itself into much more modest proportions, and 'Right wheel' was the order given at once by Walker.

A few more minutes and we were enjoying the firstfruits of success—in other words, we were looking down on the other side. All climbers know well how delightful it is to get their first peep over the ridge, which, in this case, was especially enjoyable. An interesting rock crest led us to the summit, which we reached at 6.35, or in 2 hrs. 40 min. from the hut. Here a clear sky and bright sunshine awaited us.

The view was very wide, varied, and beautiful, and combined the rich colour of fertile valleys with much weird mountain grandeur, the nearness of the Tödi, Biferten Stock, and Scheerhorn, and a view both up and down the Linththal would alone guarantee that. I will say no more than that we expected to have a noble view, and that our expectations were more than realised.

Plenty of tempting variations for the descent, difficult and easy, offered themselves to us to E., S., and W., but we rejected them with scorn. We had been delighted with the route by which we had come; why should we take another? Several routes led to Stachelberg, whither, indeed, we were bound; others led to Glarus and elsewhere. Undoubtedly there is still much new work to be done on the Glärnisch, and more old work which will be new to Englishmen. Well! let others come; let them win the glory and wear the laurel: we were contented. It was also our opening day, and it would have been foolish to indulge in heroics on our first mountain.

was evidently taken from the place where we joined the glacier; the northern summits are not seen in the picture. We are indebted for it to Herr C. Koch, of Schaffhausen.

We spent 55 min. most enjoyably on the narrow rock-crest which forms the summit, put the first English names into the bottle which we found in the cairn, and left it with regret at 7.30.

Near the bottom of the couloir an absurd incident happened. I had in my boots a number of new four-spiked Mummery screws. The sun had softened the snow-crust to snowball consistency. Without any warning both my boots balled and I shot off at a speed almost as great as that described by Carr on another occasion as 'stealthy haste.' In my case I hardly know where the stealth would come in. I pulled myself up when abreast of Walker, who was in the middle, and though at the time I felt rather like a naughty boy who had been caught stealing an apple, and who expects a whipping, I thoroughly enjoyed seeing Walker turn round, drive his axe-head into the snow, and draw the rope in taut, all in a second of time. It was delightful. Carr would have done just the same, but he was in front, and it all happened so quickly that he missed it entirely. He was almost if not quite on the flat snow-field, so that we could not possibly have come to any harm.

We arrived at the hut at 9.10, and sauntered gently down to Vorauen, where we received the congratulations of our friends, and left with much regret this lovely little alpine resort in the evening for Stachelberg. We then had an ambitious programme, which began with the Tödi and Maderanerthal, but which, alas! was ultimately changed to the Schweitzer Hof at Lucerne, Meiringen, and the Grimsel. As it turned out, we climbed the Glärnisch on the one fine day during our stay in Glarus; none other would have done so well, and we considered ourselves to have been most fortunate in thus scoring a success at the outset of our campaign.

THE ASCENT OF ACONCAGUA.

THE following telegram from a member of Mr. FitzGerald's party appeared in the 'Daily Chronicle' of January 18, and is printed here with the permission of the Editor:—

'Mendoza: January 16, 7.35 P.M.

'Mr. FitzGerald and Zurbriggen, with four Swiss porters and ten mules, left Inca for Horcone's Valley on December 23, and bivouacked 12 miles up the valley.

'*December 24.*—Proceeded 8 miles round the N. of Aconcagua, expecting to reach the summit on the 27th. Bivouacked at an altitude of 14,000 ft. All well.

'*December 25.*—Bivouacked 19,000 ft. on the "col" (neck of the mountain). All are suffering from sickness. The cold is intense. Two aneroids ran to 27,000 and broke. The weather is very bad; snow and gale.

'*December 26.*—The Russian furnace refused to act and exploded. Sent down two porters who were ill, and did the cooking myself. The tins were bad, and we had no spirits.

'Zurbriggen while prospecting found Gussfeldt's card in a tin box, dated March 1883. The height was 21,000 ft.

'*December 27.*—As we had no hot food we were forced to descend. We rested three days in the valley, and were obliged to send wood and water to the col.

'*December 30.*—We made a second attempt. Boiling thermometers useless. They were not rated high enough. During three days the lowest temperature was 5° F., and the highest in the sun 26·46°.

'*December 31.*—We started for the summit. Zurbriggen suffered from frozen feet, and was carried up the mountain with great difficulty. We bivouacked for 2 hrs., and, after constant rubbing, the feet were restored.

'*January 2.*—We had ascended over 22,500 ft., and were not near the summit. We all returned to Inca to recoup.

'Crossing the river a mule fell and got wedged between rocks. Zurbriggen being underneath was nearly drowned. He received some injury to his shoulder.

'The weather was still bad.

'*January 9.*—We made a third attempt to get to the top of Aconcagua. The cold was more intense.

'*January 13.*—We bivouacked at a height of over 20,000 ft.

'*January 14.*—We reached the arête between the peaks at a height of 23,000 ft. Mr. FitzGerald turned back ill.

'Zurbriggen reached the summit at 5 P.M.

'Mr. FitzGerald hopes to reach the summit next week.

'The mountain is over 24,000 ft. high.'

As regards the greatest heights previously attained, the matter will be found fully discussed by Mr. D. Freshfield in vol. xii. of the '*Alpine Journal*,' pp. 52-60, 99-108. The height assigned to Aconcagua by Dr. Gussfeldt after careful trigonometrical measurement was 22,869 ft. It will be interesting to learn the nature of the observations on which a so much loftier elevation is now attributed to the mountain.

THE ALPS OF NEW ZEALAND.

THE following letter has been transferred to us by the Editor of the 'Geographical Journal,' in order that, for public convenience, the discussion initiated in these columns might be concluded in the same place. Our readers will find Mr. Mannering's statements critically examined in a subsequent note by Mr. Douglas Freshfield, whose exhaustive summing-up must be considered as closing the discussion.

'SIR,—I was astonished to see in the May 1896 number of the "Geographical Journal" (p. 483) a paper by Mr. E. A. FitzGerald entitled "The First Crossing of the Southern Alps of New Zealand," and still more surprised, on perusing the report of the discussion which followed the reading of the paper, to find that no exception was taken to the extraordinary title of the paper.

'For Mr. FitzGerald's own information, and to enlighten those who may be interested, I append a list of passes of the Southern Alps, with reference to the discovery or existence of the same.

'To avoid any misunderstanding it would be well to define the limits of the "Southern Alps." Reference to Mr. FitzGerald's own locality plan on his map published with the paper (the source of which, by the way, is not acknowledged) will clearly show that his excursions were limited to a small part of the great chain, and that part by far the best known. The Southern Alps proper were defined by Von Haast thirty years ago as commencing at Arthur's Pass and extending southwards for a distance of 120 miles to Haast Pass. This definition has been generally accepted, *although it confines the Southern Alps to their narrowest limits.*

'The following is a list of known passes. It is possible that others may have been effected, but I can find no record of the fact:—

'LIST OF PASSES.

'*Arthur's Pass* (8,013 ft.), over which the coach road from Christchurch to Hokitika passes.

'*Harman's Pass* (3,980 ft.).—Situated at the heads of Waimakariri and Arahura Rivers. Discovered in 1865.

'*Browning's Pass* (4,752 ft.).—Situated at the head of the Wilberforce River. Discovered in 1865, and used during the gold rush to the West as a stock route.

'Particulars regarding these three will be found in Haast's "Geology of Canterbury and Westland."

'*Mathias Pass* (5,100 ft.).—At the head of Mathias River. See "Report of Lands and Survey Department of New Zealand, 1881 and 1882," p. 27, also "1882 and 1883," p. 41.

'*Whitcombe's Pass* (4,180 ft.).—Situated at the head of Rakaiia and Hokitika Rivers; first crossed in 1863 ("Canterbury Provincial Government Gazette," July 1863).

'*Strachan's Pass* (5,651 ft.).—Crossed in 1881 by a member of a

survey party from Hokitika, connecting Wanganui and Rakaia Rivers.

'*Sealy's Pass* (5,800 ft.).—Connecting Godley Glacier and Perth River, and first crossed by New Zealand Alpine Club party ("New Zealand Alpine Journal," vol. i. No. 1, p. 59, and No. 2, p. 121).

'*Graham's Saddle* (about 8,500 ft.).—Connecting Tasman and Franz Josef Glaciers. First crossed by Mr. FitzGerald, Mr. Harper, and Zurbriggen on their return from West Coast. Approaches to which were well known ("New Zealand Alpine Journal," vol. i. No. 5, p. 280).

'*FitzGerald's Pass* (about 7,180 ft.).—Connecting Hooker Glacier and Copland River. First crossed by Mr. FitzGerald with Zurbriggen, and stated by Mr. FitzGerald as being the first crossing of the Southern Alps ("Geographical Journal," vol. vii. No. 5, p. 488; "Report of Department of Lands and Survey of New Zealand, 1894-1895").

'*Fyfe's Pass* (about 7,000 ft.).—Connecting Mueller and McKerrow Glaciers ("New Zealand Alpine Journal," vol. i. No. 5, p. 294).

'*Brodrick's Pass* (5,310 ft.).—Connecting Hopkins and Landsborough valleys ("Report of Department of Lands and Survey of New Zealand, 1889-1890," p. 16, and appendix A).

'*Haast Pass* (1,716 ft.).*—Frequently used as a route from Otago to Westland (Haast's "Geology of Canterbury and Westland").

'Most of these records, if not all, can doubtless be found in your Society's valuable library.

'In the face of these facts, of which Mr. FitzGerald does not seem to be aware, it must be admitted that his claim to the first passage of the Southern Alps falls to the ground.

'All New Zealand climbers have the greatest admiration for Mr. FitzGerald and his guide as peak-climbers, but he can lay no claim to exploration in this colony, and he has not added anything to previous topographical knowledge of the country, except in the most minor details. The pass he crossed (with the aid of the map published in the New Zealand Survey Report, 1892-1893, p. 42) has been since unfavourably reported on by the Government surveyors as being too high, difficult, and expensive a route to be of any practical value.

'The problem of finding a pass suitable for tourist and stock traffic still remains.

I am, Sir, yours faithfully,

G. E. MANNERING,

'Hon. Sec. New Zealand Alpine Club.

'Christchurch, New Zealand:
July 3, 1896.

'To the Editor of the "Geographical Journal."'

* This was Von Haast's determination. It has long since been corrected. 'In future the height of the pass must be accepted as 1,897 ft.' See 'Survey Report,' 1885-6, p. III.—D. W. Freshfield.

A NOTE ON THE 'SOUTHERN ALPS' OF NEW ZEALAND.

BY DOUGLAS W. FRESHFIELD.

I CANNOT begin in the formula that threatens to become classical in these pages—*my attention has been called*—because my eyesight does not yet compel me to read even the small print of the 'Alpine Journal' by proxy. But I have noticed in the number for last August a continuation by Mr. A. P. Harper of the correspondence on the relative claims of New Zealand travellers and surveyors, and I observe that he gives, as his main motive for writing, a statement I made in my address delivered as President to the Alpine Club in December 1895.

My statement ran as follows:—

Mr. FitzGerald 'proved the practical utility of climbing by finding for the colonists the easy and direct pass they have so long wanted and so long sought to the West Coast.' Mr. Harper 'submits he has not done so,' and asserts that my expression shows 'how erroneous an impression had been conveyed.'

I have judged it expedient, in order that any answer I might make should be final, to wait to reply until after the appearance of Mr. Harper's long-promised volume on his own explorations. I have now had the pleasure of reading his book, as well as, I believe, almost all that has been written on the New Zealand Alps recently or in past years. In the result I cannot see my way to make any alteration in my statement, which it appears to me is most fully borne out both by geographical facts and official documents. I cannot believe that my words could convey any erroneous impression to an audience, or to readers, who were presumably acquainted with Mr. Harper's and Mr. Mannering's papers in the last volume of the 'Alpine Journal,' and had had the summary of Mr. FitzGerald's exploits recently before them.*

In the first place the reports of Von Haast in 1865, and of Mr. Strauchon, chief surveyor of Westland, in 1892-3, are conclusive as to the want felt in the colony of a pass from the Mackenzie Plains to the West Coast. Mr. Strauchon writes (p. 89): 'Another very important work on which I hope to be able to employ Mr. Douglas is the exploration of a tourist route between the West Coast and the Hermitage, *via* the Kangarua, Landsborough, and Hopkins valleys. The finding and construction of a tourists' route, if only a bridle track, would do wonders towards opening up the beauties of Southern Westland.' This particular route was reported against by Mr. Harper in 1895 as too rough and roundabout; Mr. Douglas, who was sent up the Copland valley in 1892, having previously reported that there was no practicable pass in that direction. The opening sentence of Mr. Douglas's official report runs as follows: 'I have failed in the main object—namely, to discover a pass available for

* *Alpine Journal*, vol. xvii. pp. 153, 316, 469.

a road across the main range to the Hermitage.' Such a pass was first recognised and crossed in 1895 by Mr. FitzGerald, and Mr. Harper's subsequent report, quoted below, proves that FitzGerald's Pass can be, and Mr. Harper thinks must be, ultimately made into a horse track. Expense, he informs us, is the only ground for delay.

As far as I am personally concerned in the discussion, I think it would hardly be necessary for me to say more. But my friend Mr. Keltie, the Secretary of the Royal Geographical Society, has placed in my hands a letter sent him for publication by the Hon. Secretary of the New Zealand Alpine Club (see p. 333), and we have agreed, with the assent of Sir Clements Markham, that it would be for the public convenience if the discussion initiated in this Journal were concluded in the same place, rather than in the Journal of the Geographical Society. Mr. FitzGerald is now in the Andes. His absence makes it the more requisite to point out where, and to what extent, the local feelings of the colonists are leading them into criticisms and contradictions that cannot be sustained.

Not content with a general observation—which few would have contested—that the young climber's work *as an explorer* had been made too much of in this country,* his colonial critics have denied his claim to 'the first crossing of the Southern Alps,' and blamed the Royal Geographical Society for having recorded without protest a paper with this title. At that time I was in no way responsible for the conduct of the Society, I was not present at the Meeting when Mr. FitzGerald read his paper, and I should not myself have given it that title; but I none the less feel it my duty to point out that his critics are themselves chiefly to blame for its ambiguity.

Let us look back to the mountaineering literature of New Zealand, the works of Von Haast, Von Hochstetter, Von Lendenfeld, Green, Mannering, and Harper.† But before we take up their volumes it may be well to note, in passing, that the belief that Captain Cook gave the name *Southern Alps* to the *whole* of the mountains of the South Island is not at all borne out by the map attached to his 'Voyages.' There the Southern Alps are made to terminate in a

* We must in fairness, however, note that the Editor of the *New Zealand Alpine Journal* (vol. i. p. 54) has expressed an appreciation of Mr. FitzGerald's work very different to Mr. Mannering's. 'From February 19 to March 11, Mr. FitzGerald spent his time in crossing a saddle between the Footstool and Mount Stokes, going down the Copland River, and returning from the West Coast with Mr. A. P. Harper *via* the Franz Josef Glacier over into the Tasman again. We hope to publish his Journal, or copious extracts from it, in our next number. It teems with incident, *discovery*, and adventure.' The italics are mine.

† *The Geology of Canterbury and Westland*, by Julius von Haast, F.R.S. (Christchurch, 1879); *New Zealand*, by Dr. von Hochstetter (London, 1867); *The High Alps of New Zealand*, by the Rev. W. S. Green (London, 1883); 'Der Tasman Gletscher und seine Umgebung,' by Dr. von Lendenfeld, *Petermann's Mitteilungen* (Ergänzungsheft No. 75), 1884; *With Axe and Rope in the New Zealand Alps*, by G. Mannering (London, 1891); *Pioneer Work in the Alps of New Zealand*, by A. P. Harper (London, 1896).

broad gap about 48° S. latitude, and the mountains N.W. of Bank's Peninsula are marked as separate ranges, and called 'Snowey (*sic*) Mountains.' It is further proper to point out that on the map of New Zealand (1 : 1,000,000) engraved by Mr. Ravenstein for the Colonial Government in 1876, the final S in 'Southern Alps' is placed in close proximity to Whitcombe's Pass*—almost, that is, on the same spot as by Captain Cook. I do not myself attach any very great importance to indications of this kind on maps, but in a purely technical matter they are at least evidence of the view of the cartographers concerned.

Let us return to our books. Von Haast, no doubt, continually uses the expression *Southern Alps* as covering the whole elevations from cape to cape of the South Island. I have searched his 'Geology of Canterbury' in vain for any such definition of the Southern Alps (Haast's Pass to Arthur's Pass) as Mr. Mannering—unfortunately without giving any reference—has attributed to him. I find, on the contrary, many passages in that standard work which are absolutely inconsistent with the limitation suggested.†

Von Haast describes at some length, without giving it any distinctive name, what I may perhaps call the central chain of the Southern Alps, the unbroken snow-crest that extends from near Haast's to Whitcombe's Pass.

The following sentence (p. 180) deserves quotation: 'On the west side of Whitcombe's Pass rises the magnificent pyramid of Mount Whitcombe, and from here to Haast's Pass the Alps, with their enormous masses of snow and ice, form for nearly 100 miles an impassable barrier between the two coasts to the traveller, except to the mountaineer, who, alpenstock and ice-axe in hand, can cross over several cols by ascending a glacier on one side, and after passing a névé saddle descending a similar stream on the other.'

Hochstetter included in the *Southern Alps* all the snowy ranges south of Harper's Pass (pp. 478-482).

Mr. Green succeeds with the following passage (p. 69): 'Crossing the straits to the southward, we find in the provinces of Nelson and Marlborough a number of high Alpine ranges enclosing charming valleys. Further S. these ranges draw together till in the great range called by Captain Cook the *Southern Alps* they assume the form of a great mountain wall sending off numerous spurs, rising into bold Alpine peaks, and for over 100 miles possessing no col or pass free from eternal snow and ice.'‡

Dr. von Lendenfeld adds topographical details. 'The first pass under 2,500 metres to the N. of Haast's Pass is the Whitcombe Pass, 100 miles distant. The part of the Divide between these

* The existence of this pass, a green gap (4,212 ft.), was first indicated to the surveyors by Mr. Samuel Butler, who, in his fantastic romance *Erewhon*, gave a vivid picture of the New Zealand Alps.

† See chapters i. ii.; section, 'Physical Geography.'

‡ I can find nothing on p. 69 of Mr. Green's book to explain Mr. Harper's reference to it (*A. J.* vol. xviii. p. 202) as indicating that Mr. Green fixed the limits of the Southern Alps at Haast's and Harper's Passes.

two passes contains the highest summit in New Zealand; the lofty ice-clad ridge sinks nowhere under 2,000 metres, and its mean height may be taken as 2,500 metres. In all this chain there is no pass free from snow.'

None of these writers attempts any precise limitation of the term Southern Alps. Mr. Green, it is true, by implication excludes the ranges of Nelson and Marlborough, and includes the peaks S. of Haast's Pass. Mr. Mannering* is the first to define for us the '*Southern Alps proper*.' 'The Southern Alps proper,' he writes, 'may be said to extend over a distance of about 100 miles of the middle part of the South Island.'

Mr. Harper, in his article in the '*Geographical Journal*' (January 1899), and again in his book, written before mid-March 1896, paraphrases very closely—without quoting—Mr. Green. 'Further, S. these ranges draw together, till, in the Southern Alps, they form a great mountain wall running from N.E. to S.W., which sends off a number of spurs rising into bold Alpine peaks, and for upwards of 100 miles presents a snowy barrier, *crossed last season for the first time by a pass lying at the head of the Godley Glacier, to the N.E. of the district embraced in the map.*' The words I have italicised are omitted in Mr. Harper's subsequent book, and 'between the West and East Coast districts' substituted for them. But Mr. Harper goes further—in his article. He proceeds to give details as to this snowy barrier and its passes.

'On the main range,' he tells us, 'four saddles have been successfully reached—namely, the Godley Saddle, reached by Sealy in 1869, and crossed in 1892 by Mannering and Lean for a short distance towards the West Coast; the saddle at the head of the Tasman, by Von Lendenfeld; that at the head of the Hooker by Blakiston and myself; and on the Mueller, the Burron Saddle, in 1889, by Brodrick's Survey party.'

In a previous paragraph Mr. Harper had informed his readers that 'Mannering and Lean made a descent to the head of a valley on the West Coast, but, owing to a mishap, were unable to proceed any further.'† Mr. Harper, therefore, is clearly responsible for having in 1898 led the Geographical Society to believe that no complete crossing to the West Coast of what he terms the main range of the Southern Alps had been effected prior to that date. His information, however, as I shall shortly have to show, was incomplete and somewhat misleading.

Now let us take Mr. Mannering's letter and compare his statement with his colleague's. The first four passes in his list are not within 100 miles of Haast's Pass, or among the passes of the main range of the Southern Alps catalogued by Mr. Harper. The fifth and twelfth are the boundaries of this main range.

Neither from Strauchon's nor Fyfe's Pass did the party descend to the West Coast. Graham's and FitzGerald's Passes were first traversed by Mr. FitzGerald himself. There remain only Sealy's

* *With Axe and Rope*, p. 2.

† See also *N. Z. A. J.* vol. i. p. 59.

Pass and Brodrick's Pass. Mr. Mannering's first reference shows that the New Zealand Club party which crossed Sealy's Pass were prevented by an accident from completing the expedition. But he has omitted—and it is a curious omission—to insist in any way on a statement (covered by his second reference) which was repeated in his own paper in the 'Alpine Journal' of August 1894, that in March 1892 'The Messrs. Pringle (two) and Blythe crossed the Sealy Pass and reached civilisation on the western side.' This expedition was clearly the first complete crossing of 'the Southern Alps' in the sense in which the term is used by Mr. Harper in his paper communicated to the Geographical Society.

Brodrick's Pass—a roundabout route—far to the S. and near Haast's, had, no doubt, been discovered and reached before Mr. FitzGerald's visit, but, so far as I know, there is no record of its complete crossing to the West Coast, and Mr. Harper has emphatically pronounced against it on the ground not only of its circuitousness but of its roughness.*

From these extracts the attentive reader has had an opportunity of gathering some impression of the nature of the unbroken range extending for 100 miles between Haast's and Whitcombe's Passes. An Alpine comparison may aid him to appreciate the singular importance of this central crest in the orography of the island. It would find its parallel if the central crest of the Alps was uninterruptedly snowy from the neighbourhood of the Little St. Bernard to the St. Gotthard, and if the inhabitants of Bern and Vallais had to go round to one or other of those passes when they wished to traverse the chain with quadrupeds. When Mr. FitzGerald landed in New Zealand no horses or cattle—it seems probable no human being, except the Messrs. Pringle and Blythe—had ever reached the townships of the West Coast over any gap in this portion of the watershed.

Further north and south glacier groups are found, but they are divided from one another by low green gaps, about 3,000–4,200 ft. in height, for the most part traversable, and long since traversed. Among these gaps are Harper's and Arthur's Passes, the former of which lies about 50 miles from Whitcombe's and 150 miles from Haast's, the latter 135 miles from Haast's Pass.

It appears to me a natural inference from these facts and books that the term 'Southern Alps,' if from a geologist's point of view applicable to the hills from cape to cape, is, from an orographer's point of view, more peculiarly applicable to the ice-clad portion of the range, and has been often so applied. Colonial mountaineers, however, seem still to be at cross purposes, not only with one another, but with themselves. Thus Mr. Mannering's limitation of the Southern Alps to 'about 100 miles' cannot possibly carry them 135 miles from

* See *Reports*, 1893–4 and 1895–6. Mr. Brodrick in the latter casts doubt on Mr. Harper's having rightly identified and reached his pass; he has, however (*Reports*, 1889–90), himself written, 'The pass over the Saddle can never be made anything but a passable footpath.'

Haast's Pass to Arthur's. And Mr. Harper, who talks of the 'grave mistake' of all who do not know that 'the Southern Alps have always been considered to extend from Harper's Pass to Haast's Pass in the far south,'* has forgotten not only Mr. Mannerling's dictum as to the extent of 'the Southern Alps proper,' and that Mr. Green includes Mount Earnslaw among the Southern Alps, but also his own previous articles and the fact that he has himself in his book stated that the principal glaciers and ice-clad peaks of the Southern Alps lie between 49° and 45° S. (p. 7). Haast's Pass is only seven miles south of 44°.

The conclusion I come to, therefore, is that a visitor to the colony might reasonably assume that in using the term 'Southern Alps' in connection with mountaineering he would be taken to mean the central portion of the chain, which had been apparently defined by two secretaries of the New Zealand Alpine Club as the 'Southern Alps proper,' and that in claiming 'the first crossing' of this range he would be understood to refer to a complete crossing of the chain, and not to a mere passage of the snows of the Divide, in which the explorers returned by the way they came, without attempting to encounter the forests on the way to the coast. This was what I had understood Mr. FitzGerald's intention to be, and had he maintained this position, and explained that he had been led, as we all were led for a time, by Mr. Harper's paper in the 'Geographical Journal' to overlook the reference to the complete crossing of Sealy's Pass by Messrs. Pringle and Blythe contained in Mr. Mannerling's paper in the 'Alpine Journal,' his defence would, I think, have satisfied all reasonable persons. But Mr. FitzGerald, in his letter to this Journal (p. 41), has taken up a different and, in my opinion, wholly untenable position. In that letter he treats Sealy's Pass as outside the limits of the Southern Alps, thus indicating that he regards that term as equivalent with what is shown in the Map published in the Royal Geographical Society's 'Journal' (vol. i.), and there described as 'the central portion of the Southern Alps.' I have found no authority for so narrow a limitation, and until Mr. FitzGerald had given his explanation it was, I think, impossible for geographers to assume or anticipate that he was writing from this apparently original point of view. It was, I think, equally impossible for us to foresee that critics would be found seriously to suggest that Mr. FitzGerald's paper was an attempt to impose a claim to the first crossing of the island—that is, of a range traversed for thirty years by a well-known carriage road—on (of all bodies in the world) the Royal Geographical Society, which had recently given Von Haast one of its gold medals for his travels in this very region, and printed Mr. Harper's own paper on 'New Zealand Glaciers.' Such a fraud would hardly escape detection in a Village Institute or a Board School.

In the preceding pages I have discussed the use of the expression

* *Alpine Journal*, vol. xviii., p. 202.

Southern Alps solely from the historical point of view. I have shown that Von Haast, writing as a geologist, used it to cover the whole watershed of the South Island, that many orographers and travellers (myself among the number in the Badminton 'Mountaineering') have used it to designate at least all the glacier-bearing groups. In the first volume of the 'Journal of the New Zealand Alpine Club' there are several passages inconsistent with any other sense than this, but a clear definition is wanting. Mr. Harper and Mr. Mannering have, however, defined the *Southern Alps proper* as an unbroken range about 100 miles in length, extending to the N.W. from Haast's Pass. This description is only applicable, with any approach to accuracy, to the chain between Haast's and Whitcombe's Passes. Since Mr. FitzGerald's visit to the island, however, Mr. Harper has written to tell the Alpine Club that it is a matter of common knowledge that the Southern Alps extend from Haast's Pass to the pass that bears his own patronymic—that is, 153 miles—and Mr. Mannering has written to tell the Geographical Society that they extend to Arthur's Pass—135 miles. The Surveyor-General, on the contrary, in the 1895-6 'Report' (p. xii) clearly excludes from his consideration in reckoning the passes over the Southern Alps all gaps N. of Whitcombe's Pass.

It is manifest, I think, that while we have none of us been agreed as to what we were talking about, some of us have been both positive and vague. The combination is not an uncommon one. So much for the past. As to the future, I trust that the local authority—the heads of the Survey—will define officially the use of the term 'Southern Alps.' In my opinion no definition which includes the detached glacier ranges N. of Whitcombe's Pass, while excluding Mount Earnslaw, Mount Aspiring, and the other high peaks S. of Haast's Pass, is either worthy of scientific consideration or practically convenient. The term should either be restricted to the continuous central icy crest or extended so as to include at least all the glacier-covered ranges in the island. This latter course seems to me preferable, and it would have the incidental advantage of being a return to the indication of Captain Cook.

On other points the attempted depreciation of Mr. FitzGerald's particular discovery breaks down more conclusively. It has been asserted that the pass now known as FitzGerald's Pass had been discovered by the surveyors (although they had not crossed it) previous to FitzGerald's and Zurbriggen's journey. It has further been asserted that the pass does not fulfil the requirements of the New Zealand Government. The first allegation is in direct contradiction to the 1892 report of Mr. Douglas, the surveyor employed to look for a pass from The Hermitage to the Copland valley; the second is a technical plea rather than a substantial and practical objection.

Mr. Douglas's own narrative of his 1892 explorations is the best proof that he did not find the pass. He actually saw it, but failed to recognise or investigate it. This is what he wrote: 'An open spur leads up to the crown of the Divide, a height of 6,000 ft. above

sea level.* The top was bare of snow when I saw it first, but it must be remembered that in ordinary seasons the usual winter fall might not melt and this pass may be considered as covered with perpetual snow. We saw this pass when it was bare, but a heavy fall of snow prevented explorations in that quarter, and, although the snow came off most of the hills in a day or two, it never left the pass or the higher peaks.' That is all he says, and when he comes to the practical conclusion to be drawn from his labours he ignores altogether this 'pass,' which he did not make any effort to approach. I continue the quotation:—

'I now come to the main object for which I was sent out—that was, to determine the practicability of a route for a mule- or horse-track from "The Hermitage" across the Alps to the West Coast *via* Hooker Valley and Baker's Saddle. I am sorry to have to state that, in my opinion, the proposed route is impracticable—impossible I will not say, for it would, no doubt, be possible to tunnel under glaciers, névés, &c.; but such an undertaking may be put on one side at present. It is a great pity, as a route through Baker's Saddle would be very short, and would open up some of the most splendid scenery around Mount Cook. I am well aware that in many of the mountain regions of the earth tracks are taken through some of the most impossible-looking cañons, along beetling cliffs, under galleries, and through tunnels. But how to take a road over a sloping ice-field, which is continually swept by avalanches, is a puzzle to me, and such is a portion of the proposed route. The Strauchon Glacier, as shown in the sketch, is flanked by towering cliffs; then it widens out to the saddle into snow-fields from Banks's Peak and Mount Stokes, both névés coming down from the tops of the ranges to the glacier without a break in their slopes.

'However, as some enterprising explorer may consider I am wrong, and that a route over the saddle is to be got, I will point out the best road-line down the valley. From the cliffs under Banks's Peak to the Lower Forks there is no difficulty whatever; two short bridges over the Douglas River and Architect Creek are all that would be required, outside of the usual sidings and level crossings. I have examined both sides of the river the whole way up, and the line marked on the map is the best route to avoid natural obstacles. Of course, if a special survey were made, there would doubtless be many modifications of my line; and if a trans-insular road is never taken *via* the Copland, a practical route laid down on a map is always useful, as no one can tell what may turn up in a new country.'

Mr. Douglas, of whom I would speak with all the respect due to the man to whom we owe most of our knowledge of the western slope and its ravines, gave all his attention, as his map shows, to the wrong valley, and could propose nothing better than a tunnel from its head. He regarded, and depicted on his map as practically and permanently snow and ice-clad, the western side of the ridge, which

* Has the height of the pass been accurately ascertained? Mr. Brodrick, a surveyor, in the 1895-6 *Report*, gives its height as 7,180 ft.

has now been found not to be so.* Imagine a surveyor sent up to Macugnaga to examine the chain coming back with a report that the Weisssthor would need a tunnel, and dismissing the Monte Moro as not worth consideration. The parallel is not an unfair one.

To clinch the matter, Mr. Harper tells us that at Christmas 1894 he received an invitation from Mr. Mannering, who was 'anxious he should find some pass over to The Hermitage and join them' (p. 210); and further on (p. 270), that in March he was just starting to 'inspect the range' at the head of the Copland, in the belief that it afforded 'the only likely route,' when Mr. FitzGerald arrived from the pass.

There is surely an appreciable difference, in the opinion of most mountaineers, between hoping that something may 'turn up,' or even holding that there 'is a likely route,' and discovering and crossing a new pass.

Next as to the question of practical utility: How far have the requirements of the New Zealand Government been met? What they wanted was, says Mr. Harper (p. 179), 'a pass by which a road or track for tourists could be taken from The Hermitage to the West Coast. They require the pass to be free from snow or ice for three months in the year.' Now FitzGerald's Pass, on Mr. Harper's own showing, in contradiction to Mr. Mannering's hasty assertions, satisfies the *substantial* requirements of the Government.

'No doubt,' writes Mr. Harper, 'a track could be taken over it, and it will have to be accepted as the best and only route in the course of time' (p. 324). I might quote Mr. Harper at much greater length did space allow. The following sentence must, however, suffice: 'I am of opinion that the only direct and practical route for a pass between The Hermitage and the West Coast is *via* some Saddle west of the Footstool, and FitzGerald's Pass is the best of these' ('Report' 1894-5, p. 110). His report and book show clearly that expense is the only difficulty in opening a horse-track over FitzGerald's Pass, and neither affords any justification whatever for the concluding paragraphs of Mr. Mannering's letter. No one familiar with the old horse and cattle passes of the Alps or Caucasus can accept Mr. Mannering's final dictum, which is contrary to all our experience. The Gries was used even in winter by the Bernese peasants when they were hard pressed for food and had to fetch maize from Italy.

But, it has been urged, the pass does not fulfil the technical definition of the Government, since it is 'not free from snow or ice for three months every year.' Here we lay our fingers on the surveyors' shortcoming. They failed from want of Alpine experience to realise and point out to the Government, until too late, that its requirement of freedom from summer snow or ice was, in the case of a serviceable horse-track, excessive and superfluous. By their too literal and dumb acceptance of the letter of their instructions the surveyors left the object for which they were sent out—the discovery of a track by which a circuit of at least 100 miles might

* See Mr. Douglas's and Mr. Harper's Reports and Maps.

be avoided, and The Hermitage brought within one day of the West Coast—to be accomplished after thirty years of vain efforts,* by a young amateur and an Alpine guide, who had this one advantage—familiarity with such old trade-routes as the Gries and the Monte Moro, on which a considerable amount of snow and ice has proved for centuries no obstacle to traffic.

I trust that the foregoing statement, by showing how immaterial most of the points in dispute really are, will tend to allay any irritation that still exists in the minds of colonial surveyors and climbers, who may naturally feel a sort of property in their own mountains, and find difficulty in resigning themselves to the chance that led to two visitors being the first to cross what Mr. Harper believes will be the trans-insular pass of the future from The Hermitage and the Mackenzie Plains to southern Westland.

The Alpine Club has always been prompt to recognise the feats of courage and endurance performed by survey officers in New Zealand and elsewhere. My own sympathies have been very much with our colonial members in 'the annoyance' they so frankly acknowledge. To those engaged on the same line of research it is always vexatious to be anticipated. Mr. FitzGerald's success in first crossing the Tasman group was naturally a disappointment to those who were just starting—not for the first time—to look for the pass. The way in which the record of his journey was advertised in this country undoubtedly did injustice to the share of the colonists in mountain explorations; the same might be said with regard to his map.† A judicious friend might have suggested certain modifications in his book itself. All this we may admit. But having done so, we have, I think, a right to suggest to the New Zealand climbers that the luck was not all on one side; that Mr. FitzGerald too may have had some ground for annoyance, if no real grievance, in the fact that they were successful in making the first complete ascent of Mount Cook only a few days before his arrival in the island.

'Feelings' are, perhaps, inevitable, though I think mountaineers nowadays give too frequent expression to them. Carried into records—I will not say literature—the worst of feelings is that they are apt to interfere with a clear view of facts. We have now both Mr. FitzGerald's and Mr. Harper's narratives; they supplement one another, and read conjointly will enable the public to do full justice to all concerned. Further bickerings would be a mistake. If mountaineering is henceforth to be classed as a sport and made a matter of keen rivalries, let us all do our best to preserve the good temper and good fellowship which have made us hitherto ready to enjoy our comrades' successes—next to our own.

* Von Haast reported in 1865, 'on the possibility of finding a road to the West Coast across the Mackenzie country,' that no passage existed there anywhere except over glaciers and snow-fields, only to be crossed by experienced mountaineers (*Geology of Canterbury*, p. 106).

† While I was Honorary Secretary of the Royal Geographical Society a rule was made that the sources of all maps issued by the Society should be stated. I recommend a similar practice to publishers and authors.

REVIEWS AND NOTICES.

Pioneer Work in the Alps of New Zealand. A record of the first exploration of the chief glaciers and ranges of the Southern Alps. By Arthur P. Harper, with Maps and Illustrations. (London: Fisher Unwin. 1896.)

IN our opinion it is something of a misfortune that mountaineering works should have become so largely the subjects of commercial speculation, that Alpine authors should look for their profits in hundreds or possibly thousands, in place of in the modest tens which contented—and even surprised and pleased—their predecessors. The traveller who employs a 'literary agent' to hawk his wares—the output of his past or of his projected summer journey—round the Publishers' Row until he has obtained the uttermost farthing is in no position to complain if his book, when it appears, is pretentious in bulk without being beautiful in detail; if he finds himself the subject of paragraphs of a character to raise a blush even on a bronzed cheek; if he is liable to the persecution of the interviewer and the portrayer of 'celebrities at home;' if, in short, the wares he has parted with are puffed and 'boomed' in every way known to the book market. *Chacun a son goût.* Commercial success unfortunately too often spells literary and artistic failure. We do not propose to cite examples, and we should not make these general remarks on this occasion could they be suspected of having any particular reference to Mr. Harper's volume which, in form, in general get-up (illustrations excepted), and in the character of its letterpress is all that it should be.

It is too often not the man who has done most hard work or added most to knowledge in his chosen field who secures the largest share of popular attention. To gain a place in the mind of the public it is essential to make it a partner in our pains and pleasures, our failures and successes. The surveyor or pioneer who is mute must expect to remain inglorious. He surely has his reward; he follows a fine profession, and often satisfies an individual passion. He ought not to begrudge the peak-hunter the glory, such as it is, to be gained by a well-advertised and powerfully illustrated volume. But surveyors are human, and even in their lodges in the wilderness they sometimes crave for the sympathy of their fellows. In such a case the best thing they can do is to set themselves down to tell their own story: and this is what Mr. Harper has done. He is careful to point out, however, that his book was written before Mr. FitzGerald's was published, so that *post* does not in this instance imply *propter*. In the main the two volumes are the natural complement of one another, and the only possible matter for regret is that Mr. Harper's did not come out first. For his work and that of his comrades was most of it done before Mr. FitzGerald's visit to the colony, and to a certain extent led up to the latter's successes; even if in one particular case luck combined with insight to enable the visitor to make a discovery which the surveyors would rather he had not snatched from them. But our purpose here is to avoid

controversial matters—which are dealt with elsewhere—and to devote our available space to doing justice to a very straightforward, manly, and meritorious record of persistent explorations, carried on for the most part under very trying conditions.

Mr. Harper's sub-title, 'A Record of the First Exploration of the Chief Glaciers and Ranges of the Southern Alps,' is hardly as precise and accurate as we should expect from so severe a critic. It is fair to point out that on the author's own showing the chief glaciers lie on the eastern slope, while his record is, but for some brief references in one chapter, confined to a detailed account of the recent investigation and survey, undertaken by the Colonial Government, of the valleys on the western slope of the Central Group of the Alps of New Zealand. The hero of Mr. Harper's book—strange to say—is not himself, but rather Mr. Douglas, a veteran explorer to whose labours, extending over many seasons, his younger comrade does full and generous justice. The best evidence of the extent of these labours is to be found in a contrast between the map published by the Royal Geographical Society with Mr. Harper's paper in 1893 and that in his present book. The work has been done, and well done; and it is, no doubt, the duty of governments to be mean! Still it is difficult to read the details of the delays and hardships to which the surveyors were subjected from their inadequate staff and equipment without some impatience. They do things better in India, or even Asiatic Russia. And now that Mr. Harper has officially reported to his employers ('Reports,' 1895-6) that it is expedient that a track should be taken over FitzGerald's Pass, and further that it will bring the West Coast within a day of The Hermitage, we may at any rate express a hope that the few hundred pounds required for the undertaking will not deter the Government from at once setting about a public work which must do much not only to attract visitors to the colony, but also to render its most beautiful region accessible to its own people. Mountaineers will add a petition that the heart of the local financiers may be so far softened as to allow of their accepting Mr. Harper's suggestion and erecting a few huts, with provision cupboards, like those in the Alps, in the vicinity of the West Coast glaciers. This is all that is wanted to assure the thorough scientific investigation of the upper snows.

Mr. Harper's observations not only show us the present aspect, but help to carry us back to past ages in the history of this remarkable region. We are led to imagine (and with the help of Von Haast's map, 'Discovery of Canterbury,' p. 370, it is not difficult to do so) a coast, closely resembling that of Alaska in our own day, on which great glaciers issuing from narrow gorges spread themselves out fanwise in face of the ocean waves. Then the ice retreated, not without considerable oscillations, streams cut through its deposits, forests and ferns crept up the glens. The ranges were still devoid of inhabitants, for the Maoris are no mountaineers. Other two-legged inhabitants they had, however, in abundance; for up to the time when Mr. Harper wrote the

recesses of the western slope were the paradise of wingless birds. The *first* explorers found *weekas* in full possession. The *weeka* is a friendly and confiding bird, whose only vices seem to be an imperfect sense of property and a taste for Thyestean banquets. Wherever the surveyor went he had a poultry yard at hand, and consequently had the less need to burden himself with a portable larder. Many and amusing are the stories Mr. Harper tells us of the odd tricks and habits of his camp companions. But, alas ! on his last visit to the Copland Valley he had no companions—and no food. The birds with which the valley once swarmed had fallen victims to the cats and weasels which are introduced into the colony and take to the woods. A new difficulty was added to exploration. We must not be led beyond our scope, or we might quote some of the excellent natural history stories with which Mr. Harper diversifies his pages, and more than make up for the relative scarcity of—in the strict sense of the words—mountaineering adventure.

With trackless forests and boulder-strewn river beds, impassable gorges and abrupt bluffs below, rocks that are not only of the steepest but of the rottenest, and ice-slopes of the most treacherous quality above, the New Zealand Alps have furnished no easy field for their first explorers. They will doubtless become easier. Everything is easier to the explorer who has not to be his own beast of burden. The valleys will be opened by tracks; the peaks will become better known. Already we see in Mr. Harper's account of the Copland Valley that the process is beginning. Not only Mr. Fitzgerald, but also Mr. Douglas (see 'Report,' 1894-5) found its scrub and torrent-beds almost intolerable. Mr. Harper makes comparatively light of them; and no doubt, if the tracks he blazed (p. 284) are not overgrown, the difficulties are already further diminished, and will disappear with the construction of his projected road.

Whatever future travellers may find, Mr. Harper's book completes a picture which without it would have been imperfect—that of the central group of the New Zealand Alps in its natural state. We shall not attempt here to forestall his very clear and vivacious descriptions of scenery and adventure among the glaciers and forests of the western slope. His book deserves, and will repay, careful perusal. Readers who have also studied Mr. Fitzgerald's work are in a position to appreciate fully the labours and perils undergone by those who have done most to open up for Englishmen this noble region. Mountaineers who wish to take their share in future exploration should look beyond and behind these volumes to Von Haast's map and the Survey Reports. They will learn that south and north of the great central range, the limits of which are defined by nature in Haast's and Whitcombe's Passes, there are many comparatively isolated glacier groups, geologically part of the same chain, which will meet their requirements for years to come.

Of the illustrations the only good we can say is that the views chosen, had they been properly reproduced, would have served well to illustrate the text. But the process employed, both in this and Signor Sinigaglia's 'Dolomite' book, which comes from the same

publisher, has completely broken down. The fault is in the reproduction, for some better plates from the same negatives have appeared in the Reports of the New Zealand Survey and in the Italian Alpine Club 'Bollettino.' There is great difficulty still in obtaining satisfactory plates printed in and with the text, but in the case of full-page illustrations there can be no excuse for such faint and flat smears. The Collotype process can and has produced better results than these, and at Munich in particular has been carried to great perfection.

The map is excellent, but it is a pity that in this case (as with Mr. FitzGerald's map) there is no imprint to show that it is in fact based not on the work of any one or two men, but on that of a staff of Government surveyors, many of whom have contributed to its general excellence. There is no Government department that in proportion to the means at its disposal has done so much for glacier mapping and even illustration as the New Zealand Survey Department, and its successive chiefs and their subordinates have well earned the gratitude of all who are interested in mountain exploration.

Chamonix and the Range of Mont Blanc: a Guide. By Edward Whymper. With Illustrations and Maps. (London: John Murray. 1896.) Pp. 192.

We anticipated from the pen of Mr. Whymper a guide-book of more than usual interest and value, and we are not disappointed. Those who know the Valley of Chamonix will enjoy a perusal of this pleasant little volume, while the tourist who has not yet approached the 'Great White Mountain' will also find in it much interest and information on matters both great and small. The title of Mr. Whymper's new volume is certainly unassuming, comprising, as it does, a great deal more than might in the usual way be expected from its name. But Mr. Whymper, to his reputation as a climber, an author, and an artist, adds here by his attention to detail the character of a good man of business; and though little is said by the author to remind us directly of his long and intimate acquaintance with Chamonix, or of his mountaineering triumphs in that region, the work bears the impress of a considerable experience of the district and its literature.

After a short but practical Introduction the work commences with a concise and graphic sketch of the early history of Chamonix, so far as that is known, and then we come to the ever-attractive 'Story of Mont Blanc.' The historical miscellany, which occupies fully half the book, is interesting and clearly arranged. In concerning the history of the ascent of Mont Blanc Mr. Whymper is well advised in giving a translation in full of the account of De Saussure; and he has made judicious extracts also from some of the numerous accounts of ascents printed by enthusiastic climbers.

A 'Chapter of Accidents' is the relation of a number of accidents which have happened on or in the chain of Mont Blanc, and of their causes; and the lessons thereby conveyed to climbers, old and young, are not the less impressive because unaccompanied by

special admonitions. The Observatories of Vallot and Janssen receive due notice, and whether or not the latter is found to gradually sink with the summit snows the story of its construction will continue to be of interest.

The remaining portion of the book consists of practical information as to the various routes and excursions—great and small—from Chamonix; and although the author does not aim at providing for mountaineers the detailed information of a 'Climbers' Guide,' that supplied will satisfy many enquirers. We have alphabetical tables of peaks and passes, with their heights; lists of guides and their tariffs; and tables showing the relation between English feet and metres. The accompanying maps, plans, and illustrations (some of the last already familiar) are clear and useful. The absence of one or two recognised glacier routes in the map, which is one of those issued with Mr. Whymper's 'Scrambles,' and a few slips in the text, hardly detract from the general value of this interesting little work, which is published in paper cover at the modest price of three shillings, and which its possessors will deem worthy of a more enduring binding.

THE WINTER EXHIBITION OF PHOTOGRAPHS AND OLD PRINTS.

In following up the successful experiment of last summer and holding an exhibition in the Club Gallery, from which paintings were rigidly excluded, the Committee have continued in a very excellent course; but whereas in 1895-6 the short winter days of early darkness were allotted to the artists, while the photographs exhibited later in the year were illumined by the summer sun, this year, acting on the advice given by the late President in his valedictory address, the order of the exhibitions was reversed, 'the photographs being shown in winter, and the pictures in the brighter and longer days of the London season.'

In addition to photographs the exhibition included numerous prints of Alpine and sub-Alpine subjects, together with a collection of 25 pencil portraits by Mr. Charles Flack, amongst which we recognised such old friends as Peter Baumann, Ulrich Kaufmann, Christian Almer, and the brothers Boss.

As regards number, the photographs showed a falling off from some previous exhibitions. There appears to be a growing tendency to exhibit enlargements rather than direct prints, and undoubtedly the former are more effective on the walls of a gallery, and as a rule more artistic in tone than half-plate or even whole-plate direct prints.

In the notice of a former exhibition printed in this Journal regret was expressed that enlargements were admitted, as so many negatives are improved by enlargement, and that therefore the direct prints shown were at a disadvantage; this is undoubtedly true, but for exhibition purposes surely the best results obtainable should be encouraged; the exhibition is in no sense a photographic

competition, and any interesting work of an Alpine character, whether positively or negatively excellent, is welcomed by the Club on its walls at its annual exhibition.

Of the photographs shown last month those by Mr. Dent were the largest and amongst the finest of the exhibits; we were especially struck by his view of the Finsteraarhorn, taken from the Unteraar Glacier, and, on comparing it with the faded old silver print of the same subject belonging to the Club which adorns the wall of the anteroom, we could with difficulty resist the temptation of interchanging the two frames, in the hopes that after the conclusion of the exhibition Mr. Dent's picturesque presentment might remain as a permanent addition to the treasures of the Club. Doubtless in its day the faded print was considered a masterpiece of Alpine photography, and accounted one of the Club's most cherished possessions, and the fact serves well to illustrate the recent advances in photographic methods.

Mr. Dent's exhibits also included a fine view of the ice-fall on the Zea Glacier, and a large panoramic view of the Gabelhorn and Weisshorn massif, taken, as Mr. Rudyard Kipling would say, from somewhere at the back of beyond, which, though an admirable photograph, does not please us as a picture; but then we must admit an inherent distaste for panoramic effects. Considered, however, as a study of glaciers—their birth, adolescence, and decay—it is exceedingly fine and irresistibly recalls Forbes's poetical comparison of the course of a glacier to that of human life from its Heaven-descended origin, its formation in the womb of the mountains to its final inevitable dissolution.

Two or three Dolomite photographs by Mr. Shea also call for special mention, his views of the Cimon della Pala, Monte Cristallo, and Piz Popena being some of the best we have seen of that district. For some reason or other photographs of Dolomite scenery are rarely satisfactory; the contrasts are liable to be too harsh, and detail in the shadow is frequently conspicuous by its absence. Possibly the non-actinic tints characteristic of this rock formation may be found more amenable to the delicate discrimination of the isochromatic plate; possibly the district has not hitherto attracted the artistic attention of the Club's most gifted photographers. Anyhow, with the exception of some beautifully soft effects by Signor Sella, those by Mr. Shea are by far the best which have appeared at the Club's exhibitions.

Mr. Whympers contributions were numerous and varied. His view of fruit and flower sellers at Randa station was as nearly technically perfect as may be, while in his portrait of an old public servant it was not difficult to recognise Jost of the Monte Rosa, truly described as a member of the Civil Service.

In another frame Mr. Whympers shows us an instantaneous view of 'Daniel Maquignaz descending.' We are inclined to ask, 'Descending what?' We suspect that he has strayed a little from the usual route. In a frame hard by we noticed Antoine Maquignaz standing for his portrait—surely in a somewhat con-

strained attitude, though undoubtedly a tiptop portrait. Mr. Whympers's exhibits included also some ice-falls in the Pennine Alps.

Mr. Howard Hazell showed an enlargement of the séracs on the Pers ice-fall—a really fine bit of ice photography—also a smaller panorama depicting dawn on the Bernina range.

Dr. Tempest Anderson's enlargements of the Aiguille Noire and the Grandes Jorasses seemed to us to be carried a little too far, and produced a somewhat hard effect.

Mr. O. K. Williamson and Mr. S. Donkin also exhibited some good work, but, as in the case of the prints shown by Mr. C. C. Branch and Mr. Sydney Spencer, they were rather too small to be effective on the walls of an exhibition. Some of Mr. Branch's subjects were, perhaps, somewhat sub-Alpine in character, but his winter views of the Engadine reminded us of some of Mrs. Main's beautiful studies of the same subject, and we regret to see that she was again unrepresented at the Exhibition. We also regret that we have no contributions to chronicle from Captain Abney.

We had almost forgotten to mention a series of exhibits by Mr. Alfred Holmes, not on account of any technical inferiority, but because of the somewhat hackneyed character of the subjects, including as they did two Matterhorns and three views of the Mischabel group.

A series of over sixty views, half a dozen panoramas, and some enlargements represented Signor Vittorio Sella's work in the Caucasus during the past summer. Signor Sella's skill as a photographer is well known; the most novel examples of it were several admirable telephotographs. This invention has a great future as an aid to the powers of distant reconnaissances, both for surveyors and climbers. Some of the finest views were from a hitherto unexplored glacier of the Adai Khokh group—the Songuta Glacier. Another interesting series revealed the scenery of the Bogkhabashi group and the existence of apparently dolomitic limestones among the great pastures between the Uruk and the Cherek. Topography rather than picturesqueness has been Signor Sella's ruling motive, and this is the only criticism to be made on his show as a whole.

No such criticism applies to the splendid plate—one of a series now in course of publication by Messrs. Meisenbach, Riffarth & Co., of Berlin—of 'La Tour Ronde,' in the Mont Blanc group, which arrived too late for the Exhibition, but is now on view in the Club rooms. In this noble view we do not know which most to admire, the white cumuli massed behind the jagged pinnacles that fringe the shapely peak or the gradations of tone in the snows of the foreground. The plate, which is of large dimensions, is reproduced by the same process as the full-page illustrations in Mr. Douglas Freshfield's 'Caucasus,' and is therefore absolutely permanent. We hope Messrs. Meisenbach will arrange for the exhibition and sale in this country of these remarkable triumphs of photographic art.

The exhibition as a whole probably suffered from the badness of the season in the Alps, and this was reflected in the photographs, many of which were taken in clearing or unsettled weather.

The old prints exhibited included some large engravings of the eighteenth century, taken from a work on the dominions of the House of Savoy. Among them a panorama of Aosta and a view of Sallanches, in which the glaciers—not yet become, in Gibbon's phrase, 'famous and fashionable'—are entirely omitted, were the most interesting to mountaineers. Mr. F. Gardiner sent a large selection of the coloured views of Switzerland which filled the shop windows of Bern and Basle in the days before photography, and have still a modest charm of drawing and colour, which has won Mr. Ruskin's praise. But our members obtained, perhaps, more amusement out of some Baxter prints of about 1845, lent by the Rev. A. C. Downer. One of these, entitled 'Crossing the Crevasse du Dôme,' depicts a party strolling along the overhanging lip of a Bergschrund; the last man has put both legs through the rotten edge, but neither he nor his companions appear to be in the least perturbed by the fact. In another a party are represented as searching for a passage at the same spot with a tallow dip and a battle axe. A third view exhibited an array of pointed séracs, among which we counted no fewer than forty enthusiastic mountaineers, unroped, running hither and thither, like so many ants hunting for a practicable route over rough ground.

NEW EXPEDITIONS IN 1896 (*continued*).

Mont Blanc District.

AIGUILLE DE TRICOT (3,681 m.). *Sept. 18.*—We learn from the 'Revue Alpine,' January 1897, p. 16, that on September 18, 1896, M. Bosviel, with the guides J. Petigax, of Courmayeur, and A. Estivin, of Saint Gervais, made the first ascent of this peak from the 'Pavillon des Deux Frères,' on the Col de Tricot.

Dolomite District.

PIZ POPENA (8,148 m. = 10,812 ft.) FROM THE N.E. *August 18.*—Mr. Gerald Arbuthnot, with Pietro Siorpaes and Angelo Zangiacomì, made this new route. Leaving Schluderbach at 4 A.M., the party followed the usual route for the Cristallo Pass until they were at the foot of an ice couloir leading up from the Cristallo Glacier to a noticeable fork situated at the point where the north-east ridge of the Piz Popena merges into the north-east face (3 hrs.). They arrived at the fork by means of this couloir and of the rocks on its northern side (2 hrs.). From this point the ascent of the face presented no difficulty, and after 40 min. of easy traverses and chimney work the foot of a chimney some 30 or 40 ft. high was reached. From the top of this chimney (10 m.), which is slightly to the E. of the fork, a rib of rock led in a westerly direction to the main ridge of the mountain (15 m.), which was followed in 25 min. to the summit.

Total time (slow), including halts, 7 hrs. 40 min.

This route is an easy and interesting way of getting from Schluderbach to Misurina or Tre Croci.

Tödi District.

DÜSSISTOCK.—On July 21 E. Burchell Rodway, Esq., and Rev. H. J. Heard, and the guides Peter Brawand (Grindelwald) and Joseph Maria Trösch (Maderaner Thal) left Hôtel Alpenklub, Maderaner Thal, at 4.30 A.M. for the Düssistock, and made the ascent by the usual route, viz. south-west face and arête, reaching the top about eleven A.M. They left the summit at 12 noon by the *eastern rock arête*, crossing ten gendarmes and then descending by the N. ridge of a much larger gendarme about half-way between the Düssistock and the P. Cambriales. Most of the gendarmes were traversed not quite on the crest of the arête but slightly on the north face. They reached the Hüfi Glacier in 3 hrs. from the summit and the hut in $\frac{3}{4}$ hr. more. The route is very interesting, the rock being good; but, as the ledges were loaded with loose stones, the time was slower than it otherwise would have been.

NORWAY.

Jotun Fjelde District.

SOUTHERN ARÊTE OF URANAASTIND.*—On August 12 Mrs. and Dr. T. K. Rose and C. C. B. Moss left Eidsbod at 9 A.M., without guides, to make this ascent. The south ridge is reached either by crossing the Uranaasbræ at its extreme southern end, or by walking up Koldedal to Uradalsmulen and then going up to the right by the side of the main stream coming from the Uranaasbræ. Taking the latter way, the party reached the foot of the ridge below the hanging glacier (Uranaasbræ), at a height of 4,900 ft., at 2.20 P.M., and the south peak, 6,850 ft., at 4.15 P.M., keeping on the ridge all the way.

The rocks are easy until the final climb of 400 ft. is reached, and this occupied exactly an hour. The route taken was to the W. of the ridge for the first 100 ft., and on the ridge for the rest of the way, except for a short traverse on the western face about 100 ft. below the summit. Most of the climbing is on slabs dipping to the E. at from 60° to 70°, and jointed occasionally at right angles to this. The summit was reached at 6 o'clock, and the descent made by the same way.

The rocks below the hanging glacier were finally quitted at 9 o'clock. No great difficulty at any point on the way up or down was encountered, but on the western face care is necessary, owing to the rottenness of the rocks.

SOLEITINDER AND STORE RIIENSTIND.—Mrs. Rose and Messrs. C. C. B. Moss, F. W. Jackson, and T. K. Rose, with Knut Fortun (guide), started at 6 o'clock from Turtegrø and went over Løvnaasi to the east peak of the Soleitind, and thence by the ridge to Store Soleitind. † Thence the party climbed down over rotten rocks to

* *N. T. F. Aarboeg* for 1876, p. 84, and *A. J.* vol. xiv. p. 508.

† This was done by C. W. Patchell and party in 1895. See *A. J.* vol. xvii. p. 349.

the ridge running S.E. towards the Store Riienstind and walked along the ridge, crossing three small peaks. The ridge is narrow but not difficult, and affords some capital though easy rock-work. There were no signs of any previous visits until the last peak before the Store Riienstind, where there is a cairn said to have been built by Carl Hall. The views of the Austabottind and of Store Riienstind are very fine from this ridge. The precipice of the latter towards the N.W. and W. appears to be quite unassailable. After walking round them near the upper edge of the Berdalsbræ the party traversed the rocks just above the Gravdalsbræ, and ascended by a small cascade to the east ridge of Store Riienstind, and thence to the summit by the north-east face, the usual route. The summit was reached at 6 P.M.

SKAGASTØLSTIND was also climbed by the same party on August 22 in 9 inches of new snow.

ALPINE NOTES.

NEW EXPEDITIONS IN SPITZBERGEN IN 1896.—The notices of these in the preceding number of the 'Alpine Journal,' p. 258, were written before the map was drawn or the altitudes computed. It is now certain that the peak climbed from Flower Pass (p. 260) is the Mount Lusitania of 'A. J.' xvii. p. 310. The following are the corrected altitudes:—Mount Starashchin, *c.* 3,000 ft.; Fox Peak, 3,176 ft.; Bunting Bluff, 2,477 ft.; Fox Pass, 2,552 ft.; Bolter Pass, 1,337 ft.; Sticky Keep, 2,185 ft.; Grit Ridge, 2,130 ft.; Trident, W. prong, 2,172 ft.; Trident, central prong, 1,990 ft.; Prospect Ridge, *c.* 2,000 ft.; Ivory Gate, 762 ft.; Flower Pass, 2,667 ft.; Mount Lusitania, 3,120 ft.; Booming Peak, 2,868 ft.

W. MARTIN CONWAY.

THE GLACIERS OF MONTANA.—The following note is founded on an article in an American newspaper, dated from Blackfeet Reservation, Kipp, P.O. Montana, July 28, 1896. It gives an account of a region just purchased by the U.S.A. Government from the Blackfeet Indians. We extract the part most interesting to mountaineers:—'A few sportsmen and travellers of large experience, fortunate in obtaining permits from the India Office, have been passing the summer in these mountains for several years. They maintain that the scenery, especially about the St. Mary's Lakes, is equal to and in some respects finer than that of the Swiss Alps. The mountains, it is true, are not so high as the Alps, nor are the glaciers so extensive, but they are more rugged, some of them having sheer walls which rise from the water's edge straight up for thousands of feet. . . . The shooting and fishing in the St. Mary's country is splendid.' The account, which is signed by J. W. Schultz, relates *inter alia* how, in company with Dr. Grinnell, who has done much exploration in the district, he discovered the Blackfoot Glacier, 'by far the largest in this part of the country.'

'VISITORS TO THE GLACIERS' IN THE XVIIITH CENTURY.—Every reader remembers Gibbon's complaint in his 'Diary' of the frequent intrusion on his *coterie* of visitors to the glaciers. The recently published letters of Maria Josepha Holroyd, a daughter of Gibbon's friend Lord Sheffield, and afterwards Lady Stanley of Alderley, give a very lively picture of the company that used to assemble round the historian at a time when Lausanne seems to have been what Homburg is now to families of fashion in August. A long list of the guests, French and English, is given, including the Neckers and Madame de Staël, who is 'uglier than Lady K. Douglas, but so lively and entertaining that you would totally forget in five minutes whether she was handsome or ugly.' The descriptions of the personal appearance of the Neckers are still more cruel. The fair critic uses all the frankness of youth (she was just twenty) in dealing faithfully with her elders.

The letter from which the following descriptions are extracted is dated 'Valley of Chamouny, August 11, 1790:—

'Monday morning saw us on our route with the French Cook; the first, I dare say, who has been brought into the peaceful Valley of Chamouny. . . . On Wednesday morning we were on the road (from Geneva) a little after five. We breakfasted at Bonneville, and dined at Salanches, from which place the road is impassable for Coaches. The road from Salanches to Chamouny is beautiful; many torrents to pass, some so rapid that we were carried over, and the Char-à-bancs were held up by six or seven people. The "Torrent Noir" is very terrific. For Lady Webster's amusement there came a Thunder-Storm, attended with violent rain; which last was the most inconvenient part of the story, as the only covering to the Char-à-bancs is an Awning of Sail-cloth, which is soon penetrated by the rain. At Servoz we stopped to see a bas-relief of Mont Blanc,* which was very well executed, and the worst part of the Storm was while we were there, but it continued raining all the evening. One of the Torrents we arrived at after it was dark, and the rain had increased it so much that the people told us it was not safe to pass it. It was a tremendous scene: the darkness relieved by frequent flashes of lightning, the roaring of the Torrent, and nearly fifty of the country people assembled round us, all talking at once, some magnifying the danger, others assuring us there was none at all. You cannot think how well Mama bore it! Lady W. thought hysterics becoming. We and our Char-à-bancs were carried safely over in the space of three-quarters of an hour, and we arrived at Chamouny at half-past nine, wet through. A dram of brandy was administered to us, and none of us found any bad effects from our adventures.

'Thursday we went to the Glacier des Bois and the Source of the Arviron. Rode upon mules. Friday, after many different opinions

* The 'bas-relief of Mont Blanc' was no doubt either the original relief model made by M. Exchaquet, who was engineer of the mines at Servoz, or a copy of it. One of the reduced copies is preserved at the Alpine Club Rooms.

and resolutions on the subject, Mama, Lady W., and Louisa agreed to let us go to the top of Montanvert without them, as everybody said the fatigue was very great. Sir John Macpherson and Mr. Hawkins, the son of an Irish Bishop, are at Chamouny and went with us. They are very pleasant, lively men, and made the expedition much pleasanter. We were four hours ascending the Mountain through Woods of Fir trees, with frequent views through the Trees of the beautiful valley and the mountains on the opposite side. Most of the way was so steep we were obliged to walk. From the top of the Montanvert we went upon the Glacier des Bois, from its size called the "Mer de Glace."

'It is a beautiful scene, and such as no description can give an idea of. The Glacier takes a fine turn among the Mountains, and has exactly the appearance of a very rough Sea. We carried a cold dinner and Champagne with us, and drank the Prince of Wales's health in Blair's Cabbin (*sic*), built by an Englishman of that name. The descent was very steep, and rendered worse by heavy showers of rain, which made it very slippery. We did not go back the same way, as we wished to see the source of the Arviron again, which bursts out of a beautiful Cave of blue Ice at the foot of the "Mer de Glace." We arrived at the Inn at six o'clock like *drowned Rats*, with some reason to be fatigued, as we had walked the whole time, an hour and a half excepted when we rode upon Mules.

'Saturday morning it was agreed that we, Sir G. and Lady Webster, and Mama, and Mr. Pelham should return by Geneva, and that we should pursue our journey over the "Col de Balme," attended by Sir J. Macpherson, Mr. Hawkins, and Levade.* The whole day's journey having to be performed on Mules or on foot, the married Ladies thought would be too much fatigue for them. This and the next day I enjoyed the Scenes and myself thoroughly; the country was beautiful beyond all expression: everybody was in good humour, and we knew from one five minutes to another what we meant to do—a state of happiness we had not arrived at since leaving Lausanne.

'We left Chamouny at half-past six, and from that time to half-past six at night were either walking or riding à la Française upon mules, up and down almost perpendicular Mountains with the most delightful view all round us. We dined in a compleat rural style, seated upon our Portmanteaux with our cold dinner spread on the ground before us.

'At Martigny, in the Vallais, we found our carriage and good roads again, and arrived at Bex, where we slept, at half-past nine. The next day, Sunday, we arrived at Lausanne, seeing on our Way the Saltworks at Aigle and the Castle of Chillon, and passing by Clarens, the scene of Rousseau's 'Eloise,' which would interest any body who had read the work. As I have not, I did not feel the *raptures* that those would who have.'

* 'Levade' was Gibbon's librarian, whom the historian had lent to his young friends to act as their courier. His charge describes him as 'a very sensible man who had made the same Tour with several people.'

Miss Holroyd mentions more than once Archdeacon Coxe, the author of the then standard work 'Travels in Swisserland.' She complains, as others have since, of his lack of picturesque vivacity, particularly in his description of the Col de Balme. The compiler of the index to her letters has here fallen into error. He has not distinguished the author, whom Miss Holroyd always mentions (pp. 80, 89, 183) as Mr. Coxe, from two other Coxes, George and Edward, she mentions elsewhere by their Christian names. Archdeacon Coxe's Christian name was William. A common tour at that time, we gather, was to go to Chamonix up the Vallais and over the Grimsel to the Oberland. 'The glaciers of Bern' and those of Mont Blanc were already rivals and had their respective partisans.

Gibbon himself, after the tour of Switzerland he took as a youth, in which he studied more the manners of men than the mountains, never seems to have had any inclination to accompany his guests to the glaciers. Little new light is thrown on his Alpine travels by the volumes of his letters just issued. A letter to his father (vol. i. p. 55) shows, however, some appreciation of the Mont Cenis, and supplies some curious details.

'The roads through Savoy are very bad, but nothing could surpass the pleasantness of our passage over Mont Cenis. A very fine day, a most romantick variety of prospects, and a perfect consciousness that there would not be the smallest danger. I was carried over the mountain in a small chair by four men, who relieved each other during about five leagues. The uphill work was very hard, but upon the plain and downhill they went a kind of trot, which I can only compare to our double time. I am sure you will not blame me for having added a Guinea to the half-crown at which the King has taxed this hard day's work.'

These chair-men are the *marrons* of older writers, and are mentioned on the Great St. Bernard as well as the Mont Cenis. The origin of the word has been much disputed, and some wild conjectures hazarded, by myself among others.* It seems to me now most probable that the word was used for what was distinctively wild, as distinguished from cultivated or civilised, for the fruit as well as the men of the mountains, as opposed to the produce of orchards and towns. Such a primitive sense may explain the relation of the 'marrons glacés' of our dessert table to the 'marrons' who helped half-frozen pilgrims over the Alps.

D. W. F.

MONT BLANC AND THE RARITY OF THE AIR.—The following is a cutting from a newspaper of 1825:—

THE LAST ASCENT OF MONT BLANC.—(From the 'Mirror'). 'Berne en Suisse, September 4, 1825. Among other eccentricities of my life I have just completed the difficult and dangerous task of reaching the summit of Mont Blanc. A few hasty particulars may amuse you. Dr. Edmund Clarke, myself, and twelve guides started from Chamouni on Thursday, August 25. We reached the summit on Friday, the 26th, and arrived back at Chamouni on Saturday,

* See Coolidge's *Swiss Travel*, &c., p. 157.

the 27th. The two nights we were absent we slept, of course, on the eternal snows, in an atmosphere of 12 degrees below freezing. The dangers and difficulties of passing the Glaciers des Bossons and that of Tacconai, and subsequently traversing the immense plains of snow to arrive at the top, will all be more fully detailed in a pamphlet which is to be published at Geneva in the course of ten days, as soon as our narrative is ready. The barometer was ten inches lower with us than in the Valley de Chamouni, where we had a man stationed to observe the mercury. The thermometer at 12 o'clock in the sun was 2-12 (*sic*) below freezing only; our pulses varied from 100 to 150. The rarity of the atmosphere had very serious effects on us all. One or two of the guides bled profusely at the nose; one spit blood during a whole day. I vomited during 18 hours with little intermission. Sleep overcame us at every moment; but my principal guide, Coutet, son of him who went with Monsieur de Saussure in 1787, would not let me sleep on the snows a long time, fearing the frost, &c. One of the most remarkable things is the most perfect silence which reigns on the top of Mont Blanc. You do not hear one thing. The sky is dark, quite indigo. The full moon in such a black ground was the finest thing imaginable; one star was visible only; our faces almost all peeled, and our eyes were very much swollen. It was a hazardous thing.'

The writer was Captain Markham Sherwill, who climbed Mont Blanc on August 26 of that year. In the lengthy account of his ascent furnished to a contemporary magazine (bound up in a volume entitled 'Ascent of Mont Blanc' in the Club library) Captain Sherwill considerably modifies this statement. In the fuller account we are told that 'one of the guides bled at the nose from an accidental blow,' and that he (the Captain himself) felt 'a slight tendency to nausea,' with 'an overwhelming headache,' 'pain in the breast,' and a 'strong tendency to faint.' It would seem, therefore, that the art of framing sensational paragraphs had been learnt by some mountain-climbers at a very early date, and that the descriptions they gave of their sensations and sufferings from the 'rarity of the air' may fairly be subjected to a considerable discount.

THE HISTORY OF THE CLUB ROOMS.—The following passage, extracted from 'Round about Piccadilly and Pall Mall,' p. 80, by H. B. Wheatley, gives some interesting details as to the historical past of the premises in which the Club has lately made its home:—
 'Savile Row, named after Lord Burlington's wife, Lady Dorothy Savile, was built about the year 1733. . . . At the end of Savile Row, with its front looking up the street, is an old-fashioned brick house with a centre and wings built by Lord Burlington. Though the exterior is not very pleasing to the eye, the interior is handsomely decorated in the same style as Burlington House; the egg border that is so prominent in the large house is here found surrounding the doors and fireplaces. Lord Burlington built this as a garden or tea-house at the end of his garden, which formerly extended as far as here. The house afterwards came into the possession of Messrs. Squib, the auctioneers, who built out a large auction room, which was used at one time as a private theatre. Horace Walpole, writing on July 23, 1790, says: "I went to carry my niece Sophia Walpole home last night from her mother's, and I found Little Burlington Street blocked up by coaches. Lord

Barrymore, his sister Lady Caroline, and Mrs. Goodall, the actress, were performing the 'Beaux's Stratagem' in Squib's auction room, which his Lordship has converted into a theatre." The court by the side of the house, leading through into Mill Street and Conduit Street, belongs to the house, and is called Savile Place. It was originally a pathway to St. George's Church.'

Our Hall is Squib's Auction Room, which has served many purposes before attaining its present dignity. The mantelpiece in it, however, is not part of the old building, but was presented with its adjuncts and the clock to the Club by our late President. The curious may observe that it has a singular appropriateness, as the design in the centre represents a female figure with an alpenstock standing before a Temple of Fame and dissuading an invisible youth—probably in some such words as Plato's *τῆς ἄρω ἰδοῦ ἀεὶ ἐξόμεθα*—from following a second lady who offers flowers.

GIFTS TO THE ALPINE CLUB.—During the past year several gifts have been made to the Club. Mr. Heelis gave a very beautiful set of photographic coloured transparencies by Signor Sella. These were chiefly views of Caucasian scenery. This method of transparent reproduction brings out very successfully the depth and atmosphere of the scenery. Mr. A. MacCallum has presented six silver points depicting various climbing episodes which occurred during his ascent of Monte Rosa. Silver point lends itself admirably to these subjects, which will remind those members who are familiar with his work of the humour of the late Mr. Adams Reilly. Mr. D. W. Freshfield has presented a small photograph of the late Mr. Mummery, and also a portrait of the guide Michel Auguste Croz, by Mr. Whymper. These gifts will help to adorn the walls of the new rooms; and we may hope that they will be the forerunners of similar presents from other members.

ALPINE ACCIDENTS IN 1896.—(1) *Accident on Monte Ghiridone*.—On September 24, 1896, Dr. F. de Filippi, with two friends, brothers of the name of Zoja, started at midnight from the Baths of Craveggia, to ascend Monte Ghiridone (7,041 ft.), the summit S. of Locarno on the W. shore of Lago Maggiore. They did not reach the final ridge of the mountain until noon. They intended to traverse it and descend on the further side into the Val Cannobbina. The weather turned bad after midday, and there was fresh snow on the mountain, which in ordinary conditions offers no real difficulty. The brothers Zoja here fell into a state of collapse, and, after hours spent in vain attempts either to traverse the ridge or to descend, the party found a sheltered shelf to spend the night on. The elder brother, however, grew worse and died at 2 A.M. The survivors continued the descent next morning, but the younger brother died of exhaustion at 11 A.M. before the valley could be reached. No adequate explanation is offered of this lamentable catastrophe except the physical and moral effects produced by exposure to a mountain storm on persons without previous experience of the High Alps.

(2) *The Accident on the Predigtstuhl*.—We have to thank Mr.

E. T. Compton for calling our attention to an error in our account of this accident. It occurred not on the easy Predigtstuhl, in the Niedere Tauern, but on a very difficult rock tower of the same name in the Wilder Kaiser group. This tower has lately come into fashion with the ultra-gymnast school of climbers, though it does not seem to be mentioned in Hess and Purtscheller's very full book on the 'Eastern Alps' (1894). It can only be approached by a very difficult chimney variously estimated at 100 to 150 m. in height and by an excessively bad traverse on which the slip took place.

(8) *The Meije Accident*.—Mr. Stutfield desires to disclaim any responsibility for any part of the account of the Meije accident published in November, except the quotations in inverted commas. Mr. Coolidge wishes to correct an error on p. 264 of the November number, wherein he stated that Madame Thorant was the first lady who ever ascended the Meije. In reality she was (in 1890) the first *French* lady to make the ascent, having been anticipated in 1888 by Miss Katherine Richardson, as was pointed out by Mr. Coolidge at the time.*

MR. D. FRESHFIELD'S CAUCASIAN MAP AND APPENDIX.—Members of the Club who desire to have separate copies of the map or topographical appendix to Mr. Douglas Freshfield's 'Exploration of the Caucasus' can obtain them from the Assistant Secretary of the Club, who will forward a copy of either post-free on receipt of 10s. for the map and 3s. for the appendix.

PROCEEDINGS OF THE ALPINE CLUB.

THE ANNUAL GENERAL MEETING was held in the Hall of the Club on Monday evening, December 14, Mr. Charles Pilkington, *President*, in the chair.

The following candidates were balloted for and elected members of the Club: Messrs. A. D. T. Carey, F. Y. Edgeworth, F. Fletcher, H. C. Foster, J. M. Gordon, F. Harrison, H. L. Joseland, J. Maclay, E. A. Martel, A. B. Thorold.

On the motion of Mr. F. O. Schuster, seconded by Mr. Mortimer, the President, Mr. Charles Pilkington, was unanimously re-elected.

On the motion of Mr. Willink, seconded by Mr. Curtis-Leman, the Vice-Presidents, Dr. G. H. Savage and Mr. Frederick Gardiner, and the other members of the Committee who were eligible, viz. Messrs. H. Cockburn, G. P. Baker, J. Heelis, Ellis Carr, J. Norman Collie, and T. L. Kesteven, were all unanimously re-elected.

On the motion of Mr. A. J. Butler, seconded by Mr. Eccles, Dr. Claude Wilson and Mr. G. A. Solly were both unanimously elected new members of the Committee in place of Dr. W. A. Wills and Mr. H. Woolley, who retired by rotation.

On the motion of Mr. G. E. Foster, seconded by Mr. Clinton

* *Alpine Journal*, vol. xiv. p. 163.

Dent, Dr. W. A. Wills was unanimously elected Honorary Secretary in place of Mr. J. Wicks, who retired from the office. Sir H. Seymour King proposed a vote of thanks to Mr. Wicks for his services to the Club during four years. This was seconded by the Rev. H. B. George, and heartily accorded.

The PRESIDENT referred, with deep regret, to the three losses the Club had sustained since the last Annual Meeting, viz. Mr. C. D. Cunningham, author of 'The Pioneers of the Alps;' Mr. Charles Packe, who was well known amongst the older members of the Club, and much loved by all; and Capt. Marshall Hall, whose death had been previously mentioned.

The PRESIDENT then announced that he had been asked by the Committee to give the following message to the Club for the guidance of members, and to save the Editor of the 'Alpine Journal' unnecessary annoyance and work:—

'The Committee believe that the wishes of the members of the Club are that letters should not be published in the Journal reflecting on the conduct of any member without being first submitted to him and giving him reasonable time to reply.'

Mr. H. WOOLLEY then read a paper entitled 'A Week's Climbing round the Dykhsu Glacier,' which was illustrated by lantern slides.

Mr. DOUGLAS FRESHFIELD remarked that though Mr. Woolley had almost followed the Horatian maxim in allowing his paper years to ripen, it was not because he suffered from any lack of more recent matter. Mr. Woolley had last summer, with Mr. Holder and Mr. Cockin, made numerous interesting expeditions among the mountains round the sources of the Baksan, and had confirmed his (the speaker's) identification of the pass on the Urubashi range crossed by Messrs. Donkin and Fox. Signor Vittorio Sella had also made a long and interesting journey on the N. side of the Caucasian chain, climbed two fine peaks, Tepli and Sugan, and added to his gallery the photographs now hung on the walls. These journeys showed that Caucasian climbing was still exploration, and that, though work was going on, there was plenty more to be done. He hoped all mountaineers who went out would bear in mind that we were more or less in the position of guests, and would do nothing to offend the susceptibilities of our Russian hosts, and thus help to secure an open field for successors.

Mr. WOOLLEY, in replying, said he had to thank the Royal Geographical Society for the loan of the maps that were hung on the walls, and Mr. Clinton Dent for the slides which had been shown.

A hearty vote of thanks to Mr. Woolley for his paper terminated the proceedings.

The ANNUAL EXHIBITION was held in the Hall of the Club, and was open to members and their friends from December 15 to 31. It was on this occasion confined to mountain photographs and old Alpine prints, the Committee intending to hold an exhibition of paintings in the spring (see p. 349).

The WINTER DINNER of the Club was held at the Whitehall Rooms on the evening of Tuesday, December 15, Mr. Charles

Pilkington, *President*, in the chair. Two hundred and seventy members and guests were present, the latter including Mr. F. C. Selous, Mr. Edmund Gosse, the Hon. Mr. Justice Collins, Alderman Sir Joseph Dimsdale, Professor W. Ramsay, and Dr. Pye Smith.

NOTICE TO CONTRIBUTORS.

The Editor of the 'Alpine Journal' will feel greatly obliged if any member of the Club who may have MSS. or the material for producing MSS. interesting to his fellow members will communicate with him. Any clear and concise records of scientific observations dealing with problems connected with the Alps or climbing he would be glad to find room for. He would welcome personal narratives of Alpine climbs interesting from their novelty or other circumstances, and still more papers or notes dealing with districts still unfrequented by Englishmen—such as, for example, the Silvretta Group, the Baitone Group, the peaks of Val Codera, the Eastern Dolomites, the Valli di Lanzo, the Val St. Barthélemy, the Avers Thal, and the Lötschenthal. He will give his best consideration to anything that may be sent him, and will return any MS. which he does not see his way to use within a reasonable time.

Errata in No. CXXXIV.

Page 288, *for* Leichtenstein *read* Liechtenstein.

„ 289, in the heading *for* Schallijoch *read* Schallijoch.

THE
ALPINE JOURNAL.

MAY 1897.

(No. 186.)

ACROSS SPITZBERGEN WITH SIR MARTIN CONWAY, WITH AN
ACCOUNT OF THE ASCENT OF HORNSUND TIND.

By EDMUND J. GARWOOD.

(Read before the Alpine Club, February 2, 1897.)

Where creeping waters ooze,
Where marshes stagnate, and where rivers wind,
Cluster the rolling fogs, and swim along
The dusky mantled slope.—THOMSON'S *Seasons*.

ANYONE consulting the index to the first fifteen volumes of the 'Alpine Journal' in search of information regarding the mountaineering possibilities of Spitzbergen would find nothing, and the name of Spitzbergen has yet to be added to the list of special districts. It is an interesting fact that, in spite of its attractive appellation, no mention of this island group should have appeared in the Club's 'Journal' previous to 1895, in which year we have a paper on Ice Fjord, by Mr. E. Victor H. Gatty. The ascents made by the earlier explorers in this region—Martens, Scoresby, Lamont, and others—were confined to the smaller peaks and plateaux rising from the coast, and abstracts, by the late Editor, from their several accounts appeared in the Club's 'Journal' for 1895.

In the following narrative of a journey undertaken with Sir Martin Conway in the summer of 1896 into the interior of the West Island nothing, I fear, of any importance in the way of mountain ascents has to be chronicled; indeed, the chief claim to consideration that can be pleaded in the way of extenuating circumstances is the fact that the ascents described in the following pages are by far the lowest hitherto brought before the notice of the members of this Club.

On June 2 our party, consisting of Sir Martin Conway, Dr. Gregory, Mr. Trevor-Battye, Mr. H. E. Conway, the artist, and the writer, sailed from Hull for Bergen. Here we picked up our special ship, and, after a somewhat protracted voyage up the Norwegian coast, which looked most lovely in its mantle of winter snow, reached the entrance to Ice Fjord on June 18.

Mount Starashchin, c. 3,000 ft.

The ice was still closely packed at the upper end of the fjord, so we dropped our anchor at the entrance and waited till the tide had cleared out some of the floes. Conway and Dr. Gregory accompanied our skipper in a boat expedition up the fjord to inspect the condition of the ice, while three of us landed on the flat swampy ground forming the foreshore of Cape Starashchin. Trevor-Battye started along the coast in quest of snipe, and the artist settled down on the spot where we had landed and was soon absorbed in his work.

Wishing to see something more of the country, I struck inland across the low swampy ground, which here extends for several miles between the hills and the sea, and directed my steps to the foot of a prominent mountain ridge running southward and nearly parallel to the seaboard. My original intention was to collect specimens of the rock, but habit is strong, and I had not gone far before the temptation to attempt the ascent of the peak overcame me. After examining the ridge for a practicable route I changed my course, so as to arrive at a point more directly under the summit of the mountain, and avoid traversing the whole length of the arête. This involved crossing the boggiest portion of the foreshore, and my first attempt at Arctic exploration was decidedly damping.

The low ground which must be crossed formed a portion of the recently raised sea floor which makes so conspicuous a fringe to all the more sheltered inlets on both sides of the island, and being composed of glacial *débris* originally deposited as a kind of submarine boulder clay, its consistency is loose and treacherous. This was for the most part still covered with snow, which was melting so rapidly, now that the long Arctic day had set in, that the whole surface had been converted into a species of snow bog. During the six weeks which followed we had ample opportunity of studying the peculiar characteristics of these bogs, half snow, half water, wholly abominable, but this, being my first experience of them, made perhaps the greatest impression upon me.

Here and there low domes of mud, from which the snow

had melted, afforded a firmer resting-place for the foot. The presence of these protuberances, caused by the swelling of the saturated ground by the expanding action of frost, and the consequent formation of shrinkage cracks, approximately hexagonal in shape, during the dry season, is a very characteristic phenomenon of these lowland flats. Progress over this kind of ground was nearly as irritating as the obstacle race over loose moraine by candle-light, so frequently involved by an early start in the Alps. As I plunged up to the knees in the liquid snow bogs, splashed to the eyes, I caught myself quoting remarks which I have frequently heard dropped by the man furthest removed from the candle on one of the above occasions. After nearly an hour and a half's tramping I gained the lower slopes of the mountain, and commenced a diagonal ascent to the foot of a projecting rib. This west side of the mountain is remarkably steep, and the nearly vertical buttresses were intersected by steep gullies, at that season still filled with snow.

Never did I come across a mountain in such a wretched state of repair; step after step gave way, and I do not think that during the whole of the ascent to the arête a single hand- or foot-hold could be called really safe. Having started from the ship without any intention of climbing, I was without an ice axe, and, moreover, hampered by a gun, a camera, and a geological hammer; the former, however, I abandoned soon after commencing the ascent. After mounting a short distance I was on the point of crossing the couloir to my right, in hopes of finding firmer rocks on the buttress beyond, when a portion of the cornice above broke off, and, gathering material from the upper part of the gully into which it fell, rushed past me down the narrow, sinuous couloir, hissing and writhing like a serpent.

After this little exhibition of temper I decided to stick to my rotten buttress, and, after removing a large portion of the mountain in my struggles, reached a small cornice which projected from the W. side of the ridge. Cutting through this with the geological hammer, I gained the arête. The structure of the mountain now became clear, and I was no longer at a loss to account for its disintegrated condition. I was standing on the upturned edge of one of the harder grit bands, here interbedded with the slates of the Hecla Hook formation, a rock series apparently older than any of the fossiliferous strata on the island. In no place in the world can the disintegrating effects of frost be so admirably studied as in these latitudes; the copious discharge of water from the

rapidly melting snow, during the continuous Arctic day, permeates all the cracks and saturates the rocks with water, which on the first frosty night is expanded into solid ice. In the case of the ridge of Starashchin, the strata having been tilted into a vertical position, access for the water is easily obtained along the truncated edges of the numerous bedding planes, slice after slice of the face being consequently wedged off and shattered into incoherent piles of rock.

But my attention was soon diverted from the rocks at my feet to the magnificent panorama which my access to the ridge had unfolded. I cannot hope to convey in words the beauty and grandeur of that view; the poet to the expedition might perhaps have done justice to it, but unfortunately I had left him shooting sandpiper on the marshes below. It was so similar to and yet so different from the views to be seen on a fine day from any of the famous summits in the Alps.

It was my first peep into the scenery of Arctic lands. As we coasted northwards on the previous day thick bands of fog had hung in curtain-like folds along the land, increasing our curiosity as to the country that lay behind. Now these had all rolled away, revealing a fairyland of ice and snow. The sun shone with a tempered glow in a wonderful sky of turquoise blue, a sky the colour of which was different from anything I had ever seen above the snow-fields of the Alps, where, on cloudless days, owing to the absence of suspended particles, the colour of the sky often approaches to black. My immediate interest lay in the direction of the interior, and I eagerly scanned the scene of our future operations.

Inland to the E. and S. my eye wandered over seemingly endless ranges of undulating snow: a few rocky peaks were beginning to push their dark points through the thick white mantle accumulated during the last long Arctic night, like the first young shoots of the snowdrop on the approach of spring. Snow filled the valleys to the E. in the direction of Coal Bay, damming back the drainage and forming lakes, and stretching shorewards till it merged into the frozen margin of the fjord. In the bay at my feet gigantic icebergs of a wondrous blue shimmered in the frosty light as they glided seawards on the ebbing tide. Beyond lay the ice-pack, and at the back of beyond lay that mysterious region the secret of which so many had tried in vain to solve, and which, in spite of many an heroic effort, it still clasps tightly in its icy grasp. I thought of Nansen, that gallant Norseman who, sailing northwards now three years ago, had drifted into the silence of that frozen waste, and, as I gazed, there crept over me a deep

mysterious awe, a shadow from the threshold of the great unknown. It was a scene not easily forgotten.

But a long distance still separated me from the summit, and at any moment the captain might return and sound the signal for my recall, so stepping carefully along the arête, sometimes ice, sometimes snow, I hurried as fast as possible to the foot of the first of the twin summits.

No difficulty occurred which would have caused trouble to a properly constituted party, but climbing alone on a corniced ridge, without rope or ice axe, was rather ticklish work; the situation, however, was not devoid of humour, and I laughed aloud, whilst cutting a staircase with my hammer down a sudden dip in the arête, about as wide as my boot, when I thought of the expression which the face of my old tutor, Joseph Imboden, would have worn if he could suddenly have come across me at that moment.

After many ups and downs, however, I arrived near the summit of the northern peak; traversing below this, I kicked a passage across the snow face and rejoined the arête to the S., and was pounding along to what I considered must be the highest point of the ridge when I thought I heard a faint whistle. Turning towards the entrance of the bay I could see a tiny puff of steam floating away from the funnel of the little toy steamer, and as I watched there came a second little puff, followed by a faint whistle; this was the signal agreed upon for my recall. Glancing hurriedly round me, I exposed one film and then turned and fled.

For a time I kept along my previous track, but on reaching the foot of a long rise in the arête, I suddenly discovered that the steamer had left her anchorage and was steaming away up the fjord. Abandoning the arête, I turned straight down the W. face of the mountain, thinking it better to risk a precipitous but rapid descent than run the chance of a lingering death from starvation.

My troubles soon began: the couloir down which I started became rapidly steeper; the snow into which I plunged up to my knees gave no support, and showed an evident intention of breaking away; and a little further down the sudden acceleration of a leg which I had tentatively advanced, showed the dreaded presence of underlying ice. There was no choice but to continue the descent by the rotten rock ridge on my right. This involved great delay; armfuls of *débris* had to be pushed away, and a little platform constructed for each step: even then there was no feeling of security.

Suddenly the buttress I was descending stopped short at

the junction of two couloirs. Like those further to the N., which I had avoided in the morning, they were swept by avalanches from the corniced arête above, and presented a steep surface of treacherous ice. Retreat was impossible, so, taking an apprehensive glance up the wicked-looking gully above me, I began rapidly cutting steps with my hammer across the narrowest part of the couloir. I fear these steps would not have won approval from the editors of the Badminton book on 'Mountaineering,' in which we read that 'the greatest number' of strokes 'is required in cutting steps for a traverse of a very steep, ice-filled gully,' and, further, that 'a good guide has been known to take seventy strokes to fashion a step;' but I must own that my dominating impulse was to reach the far side of the couloir as quickly as possible. Once, when nearly across, a stone tobogganed gracefully past me, serving, if possible, to hasten my movements. But at last I was across, and after this the slope lessened, and in another 20 min. I had reached the scree slopes below.

For the first time since I left the arête I had leisure to look for the steamer: she was nowhere to be seen!

As I replaced my glasses after a fruitless examination of the bay I discovered that I had dropped the roll-holder attached to my camera. Searching carefully with the glasses along my line of route, I finally espied the truant box neatly balanced on the last point of the buttress I had quitted, and, of course, on the wrong side of the couloir. As the steamer had gone there was no further cause for hurry, but I hesitated before I decided to risk two more interviews with that abominable gully. However the disablement of one of my cameras at the very beginning of the expedition was too serious a loss to be accepted without a struggle, so, toiling up the rotten buttress once more, I managed to regain possession of the box. In returning, however, I dropped my fur cap while stooping to improve a step. It disappeared down the couloir, and there it lies, a careful search at the bottom having failed to reveal a trace of it.

As I jumped and waded along the five miles of swamp to the coast I recollected that I had eaten nothing since breakfast on the ship, and it was already seven o'clock. The reflection was not a cheering one. The steamer had gone, and Trevor-Battye and the artist had, I knew, returned long since to the ship. I looked about for a sleeping-place and for something to shoot, and thought of the stories of marooned mariners. Only the night before Trevor-Battye had recited to us a ballad of his own composition about a marooned whaler,

whose brain gave way under the strain of Arctic solitude. Some of the verses recurred to me, and seemed to describe very closely my own predicament.

And who shall win when the fates begin to rustle their pinions black?
For the bergs that ride with wind and tide had driven the vessel back,
So that she lay ten miles away, low in a red sun's track.

This was the thing which, wearying in hunger, and alone,
Allan learned as he returned to drop on a barren stone,
Sick with the sense of his impotence, and with doubt of the drear unknown.

Nor was the sequel which describes the finding of the marooned man any more cheering. It ran something like this :—

And out of the ground a figure wound through the roof of a lair of snow,
Weird as the theme of a graveyard dream, gaunt as a gallows crow,
And rocked itself on an icy shelf, moaningly and slow.

It sucked at the heel of a dead grey seal, like some wild creature caged,
And peered at the prize with puckered eyes, critical and aged,
Glancing askew at the presence new, as jealously enraged.

With these rhymes running in my head I reached our landing-place on the coast, and there, to my great relief, I found our boat, and the artist still sketching. It appears the boat had been sent to wait for me, and the artist had taken the opportunity of returning to finish his picture. My first enquiry was for food, but there was none to be had, the party having returned to the ship to dine; but I espied a half-empty mug of beer, which had been standing in the sun since the morning; this I finished without ceremony and with great satisfaction. After an hour's pull, of which I shirked most of my share, we reached the ship, and I did ample justice to a cold supper, having been nearly 12 hrs. without food.

The next two days were occupied in landing stores and ponies and establishing a camp in Advent Bay. On June 22 Conway and I started with one man and two pony sledges to establish a camp a few miles inland and explore the country in the direction of Low Sound Bay. Our chief difficulty arose from the boggy character of the ground and the prevalent fog. The ground proved very bad going for the ponies, and one or other of them was frequently engulfed up to the shoulders in liquid mud or melting snow-drifts, and the light sledges we had brought were soon worn through. We managed, however, with considerable difficulty to transport two Mummery tents and a supply of food and fodder to a knoll on the S. side of Advent Vale, about 10 miles from the coast. Here we camped for four days, during which we explored the high

ground to the S.W., the culminating point of which we christened Fox Peak. We had originally intended to cross with the ponies to Low Sound Bay, but after a preliminary inspection we gave up the idea, and made the journey alone with knapsacks, existing during the 30 hrs. we were away on slabs of emergency food. The passes by which we crossed were named respectively Fox Pass and Bolter Pass.* On our return to camp we were joined by Dr. Gregory and Pederson, a hunter whom we had brought with us from Norway. For two days we continued up the valley, and the third day we turned N. over Brent Pass to the Sassendal.

During our journey across the island most of Conway's time was occupied in making the map, so that I received the somewhat honorary appointment of master of the horse; the burden of the post was, however, greatly reduced by the assistance I received from Dr. Gregory whenever the caravan became hopelessly immersed. Another appointment which fell frequently to my lot was that of minister of the interior. This post was not of quite so honorary a character as the other, as it enabled me to choose what I liked best for dinner—that is to say, to decide whether we should sup off a blue or a red ration cartridge, and whether it should be served as a soup or a porridge. Luckily my companions were not fastidious. In Conway's case, spending as he did his days in surveying, he was thoroughly accustomed to a plain table, and Dr. Gregory kindly said he much preferred my filleted reindeer to *ragout* of crocodile or even hippopotamus steaks.

After a delay of nearly a week at Waterfall Camp, in the Sassendal, occasioned by the breakdown of our sledges, we started across for the E. coast. The last portion of the journey we performed without the sledges, as it involved the crossing of the Ivory Gate, over which it would have been impossible to drag the ponies. The watershed of the island is situated somewhere under this glacier close to the E. coast, and after crossing to Agardh Bay we were able to return to our camp the same night.

Two days were sufficient to bring us back from here to Waterfall Camp, where the cook celebrated the occasion by the addition of a plum pudding to our ordinary fare. This had been provided by the kind forethought of Lady Conway, and in order to do it justice an attempt was made to serve it with brandy sauce. Unfortunately the other ingredients to

* See map illustrating Sir Martin Conway's paper, *Geographical Journal*, May 1897.

hand consisted only of margarine in an advanced stage of decomposition, and beetroot sugar, and although we stirred it with great vigour and added arrowroot to thicken it, the brandy continued to remain proudly aloof, so we drank the brandy and eat the solid part, which we thought had a curious resemblance to toffee.

The next day the party separated; Conway and Dr. Gregory continued down the valley to Sassen Bay, while I remained at Waterfall Camp to assist in conveying the sledges back to Advent Bay on their return.

I had, therefore, two days at my disposal before they could return. The first day I spent in collecting reptile remains from the Triassic rocks on the Trident; the second day I decided to devote to an exploration of the glacier system in the neighbourhood of the Baldhead; so, packing up my tent for Carl to pick up in the evening, I walked across Brent Pass to the head of Advent Vale. For quite a long way I was accompanied by a little snow bunting, who hopped along beside me for half a mile without the slightest trace of fear, singing his sweet little song while I whistled him an obbligato. As I waded the countless streams which rippled over the moraine-strewn flat at the foot of Booming Glacier, I realised that in order to penetrate as far as possible to the S. it would be better to abandon the ascent of the Baldhead, and follow a higher ridge which runs further E. into the heart of the glacier system from which Booming Glacier takes its rise. Stumbling over the loose moraine and wading ankle deep in liquid clay, I reached the foot of a tributary glacier coming down from the S.W. This had once formed a feeder to the larger glacier, and was responsible for the old lateral moraine over which I had come. This glacier has now shrunk back into its own valley, leaving a narrow passage between its own retreating snout and the overhanging side of its advancing neighbour. A glance at the piles of ice recently fallen across this passage made me resolve to keep to the lateral moraine on which I stood, and to attempt the crossing of the smaller glacier some distance above its snout. This involved a clamber upwards over loose and boggy moraine of the most villainous composition, recalling a wet but happy day I once spent studying the formation of mud glaciers on the cliffs of Alum Bay; indeed, the stuff was nothing more nor less than a boulder clay in process of formation. On reaching the left side of the glacier I had some difficulty in finding a place where I could safely cross it, as the surface drainage which flowed to this side had excavated a channel for itself along

the edge of the ice. This was too wide to jump where it was open ; besides, there was nothing to land on on the other side except a steep ice-wall, and where, partly roofed, in the snow was in much too treacherous a condition to trust to. By following it up some distance, however, I secured a footing on the glacier, and was soon across ; the same difficulty had again to be overcome in descending from it on the S. side.

Starting up the ridge, I discovered that I had by no means exhausted the dilapidated peaks on the island, for the arête was simply a pile of debris, but the remarkable thing was the size of the fragments, the majority of which I could scarcely lift. These consisted of several large slabs of yellow sandstone, many of them 2 or 3 ft. square and over an inch in thickness, piled in a loose heap as if they had just been tipped out of a cart. During the whole ascent I never found a fragment of solid rock, and when I endeavoured to trace a fossiliferous fragment I had picked up to its parent rock by moving off the loose slabs I had finally to give up the quest in despair, as I was afraid that if I continued to remove everything that was loose I should eventually have no mountain left of which to chronicle the ascent. Indeed, the answer of the Irishman in reply to a tourist who had asked the height of a hill, that it was 3,000 ft. to go up and 1,000 to come down, would not then have been an inaccurate description of Booming Peak.

Portions of the arête were, however, covered with snow, and these afforded a welcome relief, though in places so steep and hard as to require step-cutting. Though a dull and tedious climb, the ridge afforded me the view I sought ; it commanded the whole of the basin and feeders of Booming Glacier and the now disconnected tributary flowing from the S.W. slopes of the Baldhead. Immediately below stretched the curious and interesting surface of the main ice stream with its swollen and serrated margin rising high above the centre, resembling nothing so much as the row of finger biscuits on the edge of a bowl of trifle. The evident manner in which the glacier was advancing and forcing its way up over the old lateral moraine, was most interesting. The more rapid motion of the upper layers caused the sides to overhang in perpendicular cliffs, from the top of which avalanches of ice were perpetually crashing on to the floor of the valley below.

This raised and broken edge could be traced for some distance up both sides of the glacier, presenting a marked con-

trast to the sloping convex snout of the retreating Baldhead tributary.

This is not the place to discuss the present climatic changes of Spitzbergen, but it may be noted that from this glacier we have evidence that the general advance shown by so many of the Spitzbergen glaciers does not of necessity prove an increase of glacial conditions in these latitudes.

After descending to the foot of the ridge I debated whether to re-cross the Baldhead Glacier or risk the shorter and easier passage between the two glaciers. Being tired and hungry I decided in favour of the quicker route, and skirting close round the foot of the smaller snout, I scrambled over the fallen blocks of ice until I was forced to climb on to the old lateral moraine to avoid walking under the over-hanging séracs which threatened to fall at any minute. After wading the interminable streams separating me from the camp I reached Carl and the ponies at 3 A.M. without mishap.

Carl was asleep, and the ponies had strayed out of sight, having been, as usual when left with that master mind, insecurely tethered ; having long since used up both pairs of reins and all our light Alpine rope for this purpose, he had probably nothing left with which to fasten them up. The next two days I was occupied in getting Carl and the sledges down to Advent Bay in time for the post boat.

During this journey, whilst temporarily absent exploring an alternative route, Carl succeeded in losing my hammer and ice-axe off the sledge. The loss of one of our ice-axes was badly felt when we camped, as the only substitute I could find for a tent pole was my bamboo camera-stand.

The next day we reached Advent Bay and a few days afterwards were joined by the rest of our party.

Hornsund Tind, or Mount Hedgehog.

On our arrival at Advent Bay after our voyage round the coast, finding that three days must elapse before our ship returned to Norway, and my services being no longer required to drive Carl and the ponies (all of whom I was rejoiced to find had been shipped off to Norway) I proceeded to put into effect a project which I had long cherished of running down to the south of the island and exploring Hornsund, and, if possible, ascending Hornsund Tind. This, at least, was the excuse I gave for my departure ; the real reason being that I preferred to be absent when Conway was presented with the bill I had run up for luncheons at the tourist hut, during my

three days in Advent Bay when I had returned to the coast, after living for five weeks on emergency food in the interior.

Conway was sorry he could not come with me, but generously lent me his boots, saying, that in order to finish his map he must once more see the sun. As we had previously only seen the sun on five days during our stay of seven weeks, I marvelled at his faith in that coy luminary until I caught his glance wandering from my little pile of provisions, consisting chiefly of salt reindeer, ship's bread, and emergency food, to the hotel, containing—but I know what he was thinking of, and I thought much the same, and nothing but the vision of that bill would have driven me off again on that undulating launch.

Trevor-Battye had, however, agreed to accompany me, so, piling the deck of the little 'Expres' with as much coal as she could carry in sacks and barrels, we started off on the



HORN SOUND.

evening of August 14 in a drizzling fog, taking with us ice-master Bottolfsen and a crew of three men.

After an uncomfortable voyage of 18 hrs. down the coast we arrived at Hornsund in a thick mist, and anchored among some rocks, out of reach of a stream of drifting icebergs. We spent a day waiting for the weather, and were prepared to sit it out, but the weather seemed equally determined, and, as our provisions were limited, we agreed to start next day in spite of the fog.

The next morning we spent in making preparations. None of us had much to boast of in the way of boots. I was wearing Conway's, which were a quarter of an inch too short for me. Trevor-Battye had some old shooting-boots with small mud nails, while we rigged Bottolfsen up in some ancient sea-boots, into which we hammered some cricket spikes which we discovered in Trevor-Battye's old canvas waders. There was still another man to provide for, but we only intended to take him as far as our sleeping place, so I told him to take an

extra pair of socks to put over his boots. He did so, but as he put them on immediately we landed, he arrived at the edge of the ice with a pair of frilled woollen spats, and became rather an anxiety on the glacier. Bottolfsen, having visions of sport, insisted on carrying a gun, in spite of our attempts to dissuade him. Leaving the launch at 3 P.M., we landed in the south-east corner of the bay which lies about half-way along the southern margin of Hornsund. Shouldering a tent and a rug, and provisions for twenty-four hours, we started nearly due S. over the flat-raised beach, which gradually merged inland into the terminal moraine of a large glacier.

The previous afternoon I had ascended a small hill near the coast, in order, if possible, to obtain a view of our peak, but everything over 500 ft. or 600 ft. high was buried in fog, and I could only see the snout of a glacier which appeared to



THE START.

fill the upper part of a valley. This ran in the direction in which, judging by the chart, we expected Hornsund's Tind to lie.

In the absence therefore of more definite information we decided to ascend this valley, steering generally in a S.E. direction on the chance of stumbling on our mountain somewhere up in the fog.

After examining the relics of an old blubber factory on the coast, we started up the right side of the valley, sometimes over debris slopes, and sometimes over an old lateral moraine, until we reached the edge of the glacier. On the way we passed over a small medial moraine composed entirely of grey marble, veined with pink, contributed by a small glacier issuing from a steep-sided gorge to the E. Here we mounted on to the glacier, and, entering at the same time into the zone of fog, steered by compass in a general S.E. direction. It was not long before we became involved in a labyrinth of crevasses. These ran, generally speaking, at right angles to our line of route, and being prevented by the fog from seeing

more than a short distance ahead, our progress became slower and more laborious.

My companions had scarcely any previous knowledge of glacier work, and it was with increasing anxiety that I watched our friend the cook with the woollen spats across each succeeding crevasse. After some time spent in endeavouring to reach the other side of the glacier we decided on retracing our steps to the moraine we had left. On reaching this we continued for some distance along it until forced once more on to the ice. Here, however, the gradient was less steep, and the crevasses consequently fewer and narrower; but the surface was snow-covered, and the bridges treacherous in the extreme. In these latitudes as long as the sun is perpetually above the horizon the temperature in the valleys rarely sinks below the freezing point, and the snow left unmelted from the previous winter is usually rotten and unsafe; thick bridges, therefore, which in the Alps would bear a considerable weight, even at mid-day, here yield readily to a prod of the axe. This rendered additional care necessary, and we found it unsafe to jump even narrow crevasses on account of the untrustworthy nature of the landing afforded by their edges.

As we advanced diagonally up the glacier the fog thickened, and presently it began to snow. Matters looked rather hopeless, so we sat down on the snow and ate our emergency food, and discussed the situation. After a short halt we pushed on again, having decided to continue in a S.E. direction until we reached the watershed of the island, or until stopped by impassable crevasses. Imperceptibly the fog thickened, until one could scarcely see the next man on the rope, and although the ground at our feet was so indistinct that the white lines, which indicated the snow-filled cracks of the *névé* crevasses, were not always discernible, the glare reflected from the fog and snow was almost blinding. It was impossible to see at all with glasses, and the strain on the eyes was most trying. I felt a curious mesmeric drowsiness stealing over me which I had previously experienced in a slight degree in Switzerland after a long day on the snow. We had all been affected by this feeling when crossing the Ivory Glacier, but on this occasion the strain on the eyes was greater, and the feeling more intense.

For some distance we followed the tracks of a fox, hoping they would lead us to the moraine, but presently we found ourselves again amongst open crevasses which we endeavoured to outflank. After skirting along their edges for some time Trevor-Battye, who was behind me, and keeping me straight,

as far as possible, by compass, suddenly announced that we were heading due N., and would soon be returning on our tracks, so retracing our steps we turned the crevasses on the far side and regained the more level plateau; we subsequently discovered that the crevasses ran in a circular manner round an upraised dome of ice, due doubtless to a projection in the floor of the valley at this point, and, but for the compass, we might have wandered round the dome till the fog cleared.

We continued cautiously up the plateau after this, prodding at every step until we estimated that we had come a distance of over 5 miles from the coast, and the ground appeared to drop slightly in front of us. We halted to consult, and had just agreed that we must have passed the watershed and be descending on to the east coast when the fog cleared for a moment in front, revealing, within a stone's throw of us, a precipitous wall of rock fully 3,000 ft. in height. The top was still hidden in the fog, but what we saw convinced us that this was certainly part of the mountain of which we were in search. At the same time we discovered a rocky island on our right rising out of the glacier, and decided to camp on it for the night. We had scarcely taken a bearing of it when the fog closed down on us again as thick as before. We reached it, however, at 8.30 without further accident than the temporary loss of a leg in a crevasse, and, raking together such stray stones and earth as we could find, pitched our camp on a rocky ledge and searched for water. But not a drop could we find, and eventually we gave up the quest in despair and filled our cooking pot with snow. Three mortal hours and a half did it take our little spirit stove to melt and boil sufficient water to mix with our ration cartridges, and at 12.30 midnight we lay down in a heap on the ground and tried to shiver ourselves to sleep. We had only been able to carry up one thin ship's blanket between us, and the cold was considerable. During the night the wind rose and snow fell for some hours, and the cold made it impossible to sleep. After fidgetting incessantly for a couple of hours the cook, who was sleeping across our feet, got up, declaring his intention of returning forthwith to the ship. As he would certainly have tumbled into a crevasse before he had gone 100 yds. we used our eloquence to dissuade him, and eventually compromised matters by allowing him to wedge himself in beside us, though we were already tightly packed. It now became difficult even to breathe; turning round was utterly out of the question. At 6.30 I could stand the position no

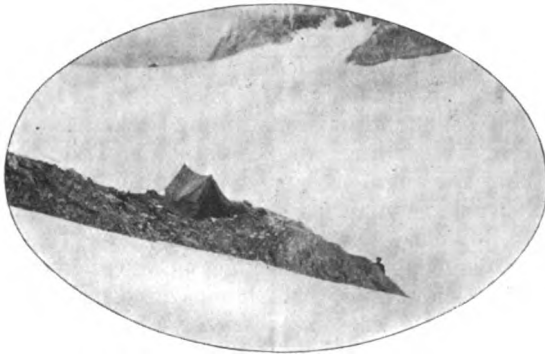
longer, and sounded the *réveil* by a sneeze, which effectually aroused my companions. The weather was precisely the same as the night before, thick fog and a slight snowfall. Occasionally we could see an outline of the foot of the mountain and our tracks over the *névé*, nearly obliterated by fresh snow. The thermometer registered 9° of frost, but it must have been considerably colder than this during the night. At 9.30 it was still snowing hard, but about 10 o'clock the fog cleared slightly, and Bottolfsen very pluckily volunteered to go back to the ship for provisions and spirit. To my surprise the cook willingly agreed to accompany him, and we watched them disappear down our tracks until the fog hid them from sight. Then, with a sigh of content, Trevor-Battye and I wrapped ourselves in the blanket and dozed till 4 P.M. We were roused by an unusual glow in the tent, and, looking out, found the sun shining and most of the mountains free from fog. Scrambling into our boots we ascended to the highest point of the ridge on which we had pitched our camp. The view was very fine; banks of cloud wererolling away over the sea, and through them shone the sun. We could see the whole of yesterday's route, and away down in the bay a little black speck indicated the position of the launch. In front of us rose the black and precipitous face of Hornsund's Tind, forming a wall nearly 2 miles in length, which terminated in a nearly horizontal *arête*. Here and there a few small *gensdarmes* protruded. The summit of the mountain rose from the southern end of this *arête*, where it crossed the western buttress which runs down steeply towards our camp. Before reaching the *névé*, however, this rises again into an irregular *arête* connected with the rib on which we were encamped.

This ridge running round to the N.W. ends in the little peak on the shore of the bay which I had ascended during our stay in Hornsund, and forms the watershed of the district. The basin thus formed is occupied by the glacier which we had ascended from the bay. To the S. of this ridge the ground falls gradually to a low, swampy tract of raised beach connected with an indentation in the coast-line to the S. This is badly delineated on the chart, and the axis of Hornsund Tind, which runs nearly N. and S., is placed on the chart running in an E. and W. direction.

After photographing the peak and planning a line of ascent, I left Trevor-Battye to sketch, and returned to camp to look for the men who were bringing our supper. I scanned the glacier in vain, and cursed my stupidity in

allowing the men to take the whole of our 60-ft. rope, leaving us imprisoned on an island of rock, surrounded by névé crevasses covered with fresh snow. As I watched for the men the fog gradually crept up, and before long it settled down upon us as thick as ever, and I realised that our chance of making the ascent was gone.

I was musing on the hollowness of life when my attention was attracted by a moving object on the other side of the tent. At first I thought it was a bear, but I presently discovered that it was our men returning from the opposite direction to that in which I was looking for them. In spite of my injunctions not to leave our track, they had tried a short cut, which had landed them in the middle of the nest of crevasses surrounding our camp. Their appearance was



OUR CAMP ON BASTION RIDGE.

decidedly ludicrous. Bottolfsen, who had made the acquaintance of the interior of five crevasses on his way up, was plastered up to the eyes with snow; he was hung all over with an odd assortment of objects—cooking tins, biscuit boxes, &c.—like the White Knight in ‘Alice through the Looking Glass.’ These had originally been contained, he told me, in a blanket on his back, but they had ‘strayed’ during his temporary visits below ground.

Summoning Trevor-Battye, who arrived shivering with cold and the paints frozen solid on his canvas, we started the tedious operation of boiling snow for supper. About 11 P.M. we saw that it was hopeless to start that night; the wind was rising, and it was snowing heavily, so we resigned ourselves to fate, and tried to sleep. Presently the wind increased to a gale, and we had to turn out and lay big stones round the floor of the tent to prevent it being blown bodily away.

We looked out at 5 A.M.; it was still snowing, and nothing was visible but a great whiteness. At 10 we cooked some coffee, and the wind, which had previously moderated somewhat, again increased to a gale. Bottolfsen cheered us with Arctic yarns, and we inspected the weather at intervals. At 12.30 we performed our ablutions, and had some lunch. The ablutions were scanty, owing to the absence of water, and consisted chiefly of a rub with snow; what the French would call 'Nettoyage à sec.'

We took stock of our remaining provisions—not a difficult operation, as they consisted of one tin of Irish stew and a ration cartridge, a few biscuits and chocolates, and some slabs of emergency food.

It was suggested that as soon as it cleared a little we should make tracks for the ship, but I was loth to abandon the expedition as long as we had food, and stated my intention of at all events reaching the foot of the mountain, and obtaining specimens of the rock. So at 8 P.M. we put the remains of our provisions in our pockets, wrapped ourselves up in everything we possessed, and started for the peak, leaving the engineer buried under the tent, from which we had abstracted our ice axes, with orders to begin melting snow when he heard us shout.

At first we kept up Bastion Ridge, as we called our camping ground, to the snow saddle which separated us from the main W.S.W. arête. By crossing exactly along the top of the saddle we avoided a gaping Bergschrund which circled the head of the glacier basin.

As the only mountaineer of the party it fell to my lot to lead, and wishing to avoid as much step-cutting as possible, I kept to the top of the arête, but my companions did not fancy the rocks, which were smooth and hard, so we descended to the edge of the snowfield which falls on the south side of the ridge, keeping along this as far as the depression at the foot of the western buttress, which I proposed to ascend. On reaching this col the fog cleared for a moment to the north and we had a glimpse of the head of Hornsund. The sun was sinking very near the horizon and glowed like a ball of molten metal, while the icebergs in the bay caught the glint of orange light, reflecting it in flashes on to the surface of the water; the whole was vignetted in fog whose margin was lit up with a crimson glow, making a most exquisite picture. It was the only view we had, for the rest of the day we could scarcely see more than a few yards ahead.

After Trevor-Battye had made a rough sketch we began the

ascent of the buttress, skirting always round the margin of the snowfield, which gradually narrowed to a steep couloir.

As I got tired of kicking steps in boots which were too short for me, I again took to the rocks, but a growl or two from my companions sent me back to the snow. We were now turning up into the narrow part of the couloir, and the steps became harder to kick and soon had to be cut. Gradually the surface of the old snow changed into névé ice, and finally to blue ice; in places this was covered with as much as a foot of fresh snow which had avalanched from the steep sides of the couloir, and made step-cutting more difficult. At length we reached the foot of the final tooth and with some difficulty gained a footing on the rocks. These were very smooth and plastered with ice, and the covering of fresh snow obliterated all handholds.

After proceeding a short distance, Trevor-Battye declared that he had had enough and proposed our return. I glanced at Bottolfsen, who said nothing, but looked unutterable things.

On a fine day half an hour's climbing would probably have taken me to the top, but the mountain was in no state for solitary climbing, and the weather was as bad as it could be. It was snowing again, and only a few feet of the base of the tower were visible through the fog. There was nothing to gain by continuing the ascent, so I read my aneroid, which gave the height as 4,400 ft. Scoresby gives the height of the mountain, as surveyed from the coast, at 4,395 ft., and that of the more northerly peak as 3,306 ft., while the chart marks the summit at 4,480 ft. We agreed at the time that the tower rose about 70 or 80 ft. above the point where we stopped. I looked at my watch; it was just half an hour after midnight.

Turning back I found my companions had already begun to descend. When we had returned a short way I remembered a stick which we had brought up to leave as a memento of our ascent. We had sacrificed one of our few remaining tent-pegs, which we had squared, carving our names on three of the sides and the date on the fourth. This we deposited as safely as possible on the rocks and continued the descent.

All went well for a time, but the steps gradually became more difficult to find, and I changed places with Bottolfsen, who had hitherto been leading down. It was an awkward position, and Bottolfsen had no axe, only the broken fragment of the pole he had brought up. I lent him my axe afterwards and tried the pole, and I can only say that his performance coming last down the upper part of the couloir was

exceedingly creditable. Indeed, the whole behaviour of my two companions was most plucky throughout the expedition. Neither of them had previously ascended a snow mountain, and their perseverance under the conditions in which we found the peak redounded greatly to their credit. I know that their chief reason for accompanying me was pure good nature, and, not being mountain enthusiasts, they must have found the ascent tedious and trying in the extreme.

Coming down was not much more rapid work than ascending, though it was vastly easier for me; in the end, however, we reached the snow col a little before 5 o'clock. Here the fog was so thick that further advance was fraught with considerable risk. It was essential that the saddle should be crossed along the top, any deviation to one side or the other would inevitably have landed us in one of the bergschrunds which swept round the head of each snow-basin, nearly joining on the saddle which we had to cross, where they were only a few yards apart.

Not a landmark could be seen, and we cast about on the edge of the col for our old tracks, but the snow, which had fallen during our ascent, had completely obliterated our foot-steps, and after turning in every direction until we lost our bearings, we were forced to return on our track to the rocks. No other resource being left, we set our compass in the general direction of Bastion Ridge, and plunged into the unknown.

After some minutes of considerable anxiety, expecting at each step to plunge headlong through the lip of a bergschrund, I noticed marks on the snow at my feet; stooping down to examine them, I found that I was walking directly in our former tracks. Yelling with all our might to the imprisoned engineer, we hurried down Bastion Ridge, and were soon under the friendly shelter of the tent, where we arrived at 5.20 A.M.

Eating up our emergency food, which we had been too miserable to consume on the peak, we washed it down with unsweetened coffee. Just as we had finished, Trevor-Battye, with an expression of intense pride, drew from his pocket a fragment of the rind of an old Dutch cheese which he had bought on the ship in Advent Bay. This he generously divided between us, and then our thoughts turned to a smoke, but our tobacco was finished, and we had only one match left. Raking up the ashes in our pipes we struck our last lucifer in breathless silence and solemnly handed it round.

After four hours' sleep we started down to the coast. The fog had lifted slightly, and we had no difficulty in finding our

way to the boat. Here we learned that the captain had almost given us up in despair, and that the steamer, which we had hoped to catch on its way to Norway, had sailed two days before, after waiting for five hours in the bay.

As our provisions were practically exhausted there was no use in remaining where we were, so getting up steam, during which process we made a short boat expedition up the bay, we set out across the five hundred miles of Arctic sea which still separated us from Tromsö and civilisation.

The voyage was decidedly lively, though not really rough; our little launch was swept by wave after wave, and we had frequently to slacken to half speed to avoid diving underneath altogether. Matters in our little cabin reached a climax when the water, which was rushing about on deck, *ricocheted* down our companion and plunged in one stupendous leap (as they say in the advertisements of waterfalls) on to our cabin floor, converting it into a swimming bath.

The boat was rolling heavily at the time, and, before we could oust the unwelcome intruder, an avalanche of miscellaneous commodities shot over my head from the shelf above. On the top of this a table, whose equilibrium we had hitherto implicitly relied on, distributed its contents impartially into the bath. The collection swimming about by this time was decidedly comic; birds, biscuit tins, bread, margarine, boots, note books, and onions jostled each other at every lurch, while a tumbler of cod liver oil, which Trevor-Battye had brought as a specific against colds, floated in amber globules on the surface of the water.

In fishing the things out I came across my watch, which had already lost its glass in the step-cutting on the previous day; its immersion in sea water had completely finished it, and nothing would induce it to go. In his book on Africa, Dr. Gregory, I remember, speaks of the treatment he recommends for watches that refuse to go: he oils them, pats them, and finally says hymns over them. Mine had been thoroughly soaked in cod liver oil, and I patted it vigorously, but, as Dr. Gregory was not present to sing hymns over it, the charm failed to work. After this we barricaded the deck with our casks and sacks of coal, and, eventually, after three and a half days at sea, we made Tromsö harbour.

Thus ended rather an adventurous expedition which brought us back after our enforced starvation with the best appetites that we had ever enjoyed, enabling us to do ample justice to the banquet given next evening to Dr. Nansen, who, we found, had just safely returned from his marvellous voyage.

As regards the future of Spitzbergen as a climbing centre it is difficult to prophesy. The traverse of Hornsund Tind should always be an interesting expedition ; but, judging from the accounts of all who have sailed up this coast, the mountain is exceedingly liable to be enveloped in fog. Further north, on King Charles's Foreland, sharp peaks of upwards of 4,000 ft. can be found, while still further north the mountains surrounding Cross Bay and Magdalena Bay contain many miniature Matterhorns which should afford good sport ; but the interior of the country, and the E. coast, at least, as far as we saw it, offer but scant attractions to the mountaineer.

It must, however, be remembered that the country itself, with its ever-changing lights and perpetual summer day, its massive glaciers and floating icebergs, cannot but prove attractive to those members of the Club who love the Alps, even on off days ; and few I think would fail to yield to the fascination of these Arctic lands, a fascination which, once felt, it is difficult if not impossible ever to shake off.



THE DOM IN JANUARY.

BY SYDNEY SPENCER.

(Read before the Alpine Club, April 6, 1897.)

THACKERAY tells us in 'The Newcomes' that there may be nothing new under and including the sun ; yet it looks fresh to us every morning. The same may be well applied to the great peaks of an Alpine range ; for he is no

lover of the mountains who does not find fresh beauties each day that he looks at them.

To put these feelings into words is, I find, a very difficult task. The whole gamut of Alpine expression has long since been played through by those fortunate individuals who led the way in mountaineering; they certainly left but scanty pastures for the imaginations of the later generations of climbers to feed upon. Unless they wandered further afield these latter have for the most part been reduced to giving somewhat flamboyant descriptions of the 'new route'—that inevitable outcome of the exhaustion of the supply of virgin peaks—though these descriptions had at least the charm of novelty in their details. Or, by way of variety, they sought after new sensations by essaying the ascent of the great peaks in winter, when it might be expected that the conditions would be of a different character to those in summer. Such is, no doubt, the case; but the winter climber in his narrative is handicapped in so far that, although he has had certain difficulties to contend with, they have often not been of the kind which lend themselves to the picturesque embellishment of a mountaineering story. Owing to the limited duration of daylight at his disposal he is as a rule obliged to choose one of the easier, or at any rate well-known routes up his peak; and, if prudent, he will make his venture with a reasonable probability of fine weather. Hurricanes and snow storms encountered on a mountain ridge are, no doubt, effective touches in a climber's picture, but they are negative advantages which the winter climber will do well to avoid.

The foregoing is, I fear, an elaborate excuse for what will probably appear to you to be a 'very plain tale from the hills.' It is, however, some time since there has been a paper on winter climbing, and this, combined with the fact that my ascent of the Dom was the first, and has been, I believe, up to now the only ascent in midwinter, must be my excuse for claiming your indulgence this evening. We chose the Dom merely because it seemed one of the most feasible of the great peaks round Zermatt which had not been already climbed in midwinter, and, as a matter of fact, we did not expect to nor did we meet with any difficulties of the gymnastic kind. Overhanging rock towers, smooth slabby faces and their kindred play no part in this story.

I paid my first winter visit to the Alps at the commencement of 1893, my attention having been drawn by a note by Mr. Dent in the 'Alpine Journal' to Zermatt, with which place I then made my first acquaintance, as previously I had avoided it

in summer. One day, in the second week of January, Christian Jossi, the well-known Grindelwald guide, met me at Lausanne, and the next day saw us crawling along the Rhone valley to Visp. The journey in winter along that valley is an experience of leisurely locomotion. One of our contemporary writers—I do not remember which—once said that the railway is the road to hell. If that be the case I am sure that the good folk of the Rhone valley may congratulate themselves that, from no fault of their own, they will take a very long while to get there. We had a delightful journey up the Zermatt valley, which, with its glistening snow-clad slopes and glittering fringes of icicles, was a veritable revelation to me. I found the Monte Rosa Hotel at Zermatt in the sole possession of an Italian artist who spent his day in the composition of marvellous symphonies in blue and white, and of Mr. Woolley, who returned just before dinner after a successful ascent of the Rymfischorn. His success fired me with enthusiasm to follow his example. Jossi wished for nothing better, and we fixed on the Wellenkuppe as a suitable peak to begin with for a comparative novice, as I then was, with but one season's climbing to my score. I engaged Adolf Schaller to accompany us. He developed the programme by proposing that we should afterwards try the Dom, which he thought would go if the weather did not change. I agreed to everything, and, like most novices, thought that saying was doing. A week later I was wiser and sadder, for our efforts that winter were doomed to ignominious failure.

Very foolishly I decided to start for the Wellenkuppe from Zermatt instead of going up to sleep at the Trift, and on January 19, at a quarter to one in the morning, we sallied forth from the Monte Rosa with every prospect of perfect weather, although the cold was a little too intense for comfort. We made a bad beginning, taking as much as four hours to reach the Trift Hotel, owing to the depth of the snow in the gorge. The Arctic temperature did not permit of more than a few minutes' rest, and we went on for two more hours until we reached the big rock halfway up the moraine which sweeps round from the end of the Gabelhorn glacier. Here we made a halt for our first breakfast, of which a few details will give some idea of the difficulties of a meal on the mountain in winter. The wine had, as we feared, long since frozen. A bottle of cold tea, on being taken out of the rucksack pocket, astonished us by bursting with a loud report and shivering into atoms. I then triumphantly produced a patent spirit kettle which I had insisted on bringing, and requested the

guides to make some tea. A quarter of an hour passed without a sign of it, so I meekly remarked that the water took a deuce of a time to boil, which only drew forth the angry reply from Schaller, 'Der verdammte Spiritus will gar nicht anzünden.' And ignite it would not, in spite of gentle persuasion in the shape of burning paper, candles, &c., underneath to warm it. We had finally to give it up, and proceeded on our weary tramp with the comforting reflection that we had, at any rate, nothing to drink. The snow had been gradually increasing in depth all the way up, and we were soon wading through the powdery stuff above our knees. From the end of the moraine we threaded our way through some séracs at the right-hand side of the Gabelhorn glacier to snow-covered rocks, which led us up the broad tongue of snow on the rock buttress between the Trift and Gabelhorn glaciers, so conspicuous in the views of the Wellenkuppe from the opposite side of the Zermatt valley. We plunged up the snowfield, finally halting at the very base of the peak itself at 1.30, twelve hours and three-quarters since leaving Zermatt, during which time I can without exaggeration assert that we scarcely even touched a rock. I was by this time heartily sick of the unending snow, and threw myself on my back, mentally cursing a taste which had led me to take up climbing as a pastime, and bemoaning our want of foresight in not having shortened the climb by sleeping overnight at the Trift, thereby ensuring our chance of reaching the summit in good time. Under the circumstances I thought that a few judicious questions would not be out of place before proceeding any further. I ascertained from Schaller that we had at least three hours' work, probably more, before we could reach the summit, as it was not likely that we should find the rocks very easy. As there were at the most from three and a half to four hours of daylight left, this obviously meant a night out, perhaps on the rocks. We had nothing to drink, and the provisions in their frozen state were uneatable, so far as I was concerned. In spite of brilliant sunshine the cold had been most intense all day and showed no signs of diminishing. I looked lovingly at my toes, which seemed quite comfortable where they were, and I suggested that we should turn back. Neither Jossi nor Schaller would give an opinion, which I thought a bad sign, so I settled the question by giving a decisive order to retreat; wisely, I think, as that night proved to be the severest of an unusually severe spell of frost, the thermometer in Zermatt registering as much as 21° below zero centigrade. The next day the weather

changed, and a snowfall, lasting for two days, put an end to any idea of ascending the Dom during the remainder of my stay that winter.

In January 1894 I again turned my footsteps towards Zermatt, but without definite plans for climbing any of the great peaks, for my experience on the Wellenkuppe had somewhat disenchanted me with the joys of winter climbing. Jossi again met me at Lausanne, and, in almost his first words, asked me if I was not going to try the Dom this time, but I declined to make any rash promises; but when, on my arrival at Zermatt, Schaller waylaid me at the hotel door with precisely the same question, adding that the Dom was now in a favourable condition for the attempt, I began to suspect that I was the victim of a deep-laid plot, and that I should have very little peace unless I made an effort to retrieve our failure of the previous winter. I was now not altogether averse to the idea, and consented to start for the Dom hut a few days later, if the weather remained fine.

The weather did not prove false, and on Friday, January 12, two sleighs jingled down to Randa, conveying, in addition to ourselves, a friend who was to accompany us as far as the hut with Schaller's brother. The walk up to the hut presented nothing worthy of notice beyond a huge avalanche, which had fallen from the end of the Festi Glacier, completely filling the bed of the Randaierbach for some distance. The hut we found in excellent order. The wind had evidently kept the exterior free from snow; nor had any snow penetrated to the interior. The usual hut programme was carried out, and at about nine I turned in, with grave doubts as to the success of the next day's enterprise, for some ominous grey clouds had been gradually gathering round the opposite peaks. But on getting up at 3.30 the next morning all misgivings were dispelled, as the unwelcome visitors had vanished, and there seemed every probability of a magnificent day. An hour later we filed out of the hut, casting final glances of envy at our slumbering companions, who had made themselves aggressively comfortable by the addition of our discarded blankets. Our troubles began soon after leaving the hut, as the snow was very deep and powdery both on the moraine and on the Festi Glacier, making our progress decidedly slow. We also experienced quite unexpected difficulty in getting through the small icefall some little way up the glacier. The crevasses were still very wide, and were not filled with snow, and the ice appeared to be in an extraordinarily rotten condition. I remember feeling intensely uncomfortable when,

while we were standing on one of the séracs, we heard two tremendous thuds of falling ice, apparently just beneath us, and each time the sérac we were on shook very perceptibly. Schaller remarked that he had never before seen the glacier in that condition, and that it was most extraordinary that it should be so in winter, and as his conversation, all the while we were threading our way through the crevasses, was profusely ornamented by such words as 'verdammt,' and 'Teufel,' I am inclined to think that he meant what he said. At this point I contributed to the day's amusement. Schaller had cut across a sloping sérac to the rocks on the right bank, and I prepared to follow. The evil spirits of the mountain were evidently at work, for I saw by the dim light of the lantern what appeared to be an unusually fine specimen of the soup plate, but on placing my foot on the spot it was met by a smooth glassy surface, and I shot down into the crevasse, the lantern choosing this moment to go out suddenly. Schaller and Jossi shouted with laughter, and thought the whole thing very funny; but it is perhaps needless to say that I utterly failed to see the point of the joke. Indeed, I am not sure that I am acting wisely in relating the incident to-night. A kind friend in the Club has supplied me with a couplet on the subject which runs thus :

A man must be an ass
Who falls in a crevasse.

Or perhaps it might suggest the lines from Gay's 'Fables'—

Fools, to talking ever prone,
Are sure to make their follies known.

At the point where we quitted the glacier I believe that the usual plan is to keep close to its edge. This was not advisable in our case, owing to the depth of the snow, and we took a course considerably higher up the rocks, where we hoped to find the snow less deep, following the tracks of some chamois which had apparently just preceded us. Hard work as we had found the going so far, it was mere child's play to what we went through for the next two hours. The slope was somewhat steep, and the snow in the same execrable powdery condition. At each step we sank in up to the waist, occasionally almost disappearing into unseen holes between the rocks. Schaller's vocabulary of florid adjectives became still more elaborate, and had this time a well-sustained accompaniment in another tongue. The chamois, too, which had evidently doubled back on to the ridge above, caused us

much annoyance by sending down showers of stones, for which we were obliged to keep a sharp look-out in case any came our way. Day broke during this portion of the climb, and I was only too glad of the excuse to stop for a few minutes to lose myself in silent delight at the gorgeous spectacle presented by the incomparable snow cone of the Weisshorn, now bathed in the crimson glories of a winter sunrise. At 9.30 we took a well-earned rest at the foot of the little gully leading up to the Festijoch. We spied our friends the chamois, a small herd of five, on the ridge, watching us with the utmost curiosity, no doubt wondering who could be foolish enough to intrude on their winter solitude. We had been terribly slow to this point, having taken quite double the time needed in summer. This was not encouraging, but it was too early to give way to doubts of our ultimate success, of which we should be better able to form an opinion further on. We mounted quickly to the Festijoch, and in about $1\frac{1}{2}$ hr. ascended without much trouble by snow and rocks to the foot of the N.W. ridge, by which we had decided to make the ascent. From here we saw that this was evidently the only available route on this side. The N. face, which is usually covered by a snow-slope running up from the Hohberg Glacier, by which the summit is sometimes reached in summer, was now an imposing sheet of blue ice, which also ran up the side of the ridge, actually covering it at two places for some distance, there joining a similar sheet of bare ice sweeping up the other side from the Festi Glacier. The wind had evidently been at work on the lower part of the ridge, which was almost entirely swept clear of snow, and looked, as far as we could tell, in fairly good order. We were at all events relieved to think that we had done with deep snow for a time. The day had fortunately settled down into one of cloudless stillness, for which we could not feel too thankful, as the intensity of the cold began to make itself felt when we were once on the ridge. The latter we found more difficult, or perhaps I should say less easy than we had anticipated. Though the rocks were not glazed over the cracks between were filled up with hard ice, necessitating a considerable amount of step-cutting and caution in our movements. At the foot of the first ice slope I rested while Schaller and Jossi cut steps up it as far as the length of the rope permitted. A meal was attempted; but anything nastier than our provisions cannot be imagined. Flakes of ice had formed in the grain of the meat, and a white coating of frost enveloped everything. The wine in the

bottles was a crystallised mass; but by a lucky chance Schaller had brought a Dauphiné skin filled with wine, which had not frozen at all, thereby demonstrating one virtue of the wine skin. I now made the unpleasant discovery that one of my feet had lost all sensation. The mere idea of frostbite induced a state of violent activity, and after ten or fifteen minutes of agitated football with the surrounding boulders I was rewarded by the welcome but extremely painful relief of restored circulation. Schaller was by this time ready to go on, and we negotiated the ice slope very comfortably, Jossi having occupied his time in cutting the most delightful little niches for the hand to facilitate our descent.

The day was creeping on and we were well into the afternoon, though we still had a good bit to do. As you are, no doubt, aware, the snow cone which forms the summit is not visible from the lower portion of the ridge, and on the state of that last slope depended now to a great extent the successful issue of our venture. If it was of snow in good condition, the climb was practically accomplished, but if we found ice in its place we should probably have to put up with defeat a second time, unless we were prepared to brave the Arctic severity of a January night on that most exposed ridge, a contingency not to be lightly risked, especially after the warning I had already received. I ought, perhaps, to explain that step-cutting in winter, owing to the excessive hardness of the ice, is a very much more arduous, lengthy, and difficult task than in summer. It was necessary also to make very deep steps, so that the descent might be effected as quickly as possible, for it was certain that in any case we should not reach the top until late in the afternoon. I began to feel a deep depression at the thought that, after all, we might not complete the ascent, and for some unaccountable reason all sorts of superstitious thoughts crowded into my mind to explain the possible failure. We had started on a Friday. We were doing the actual climb on the 13th of the month. The year was '94, which numerals added made 13; and, finally, as I could not think of any more accommodating figures, my age was 31, which inverted also represented the fateful number. As may be supposed I kept these sinister thoughts to myself, and determined that this time no suggestion of retreat should come from me. We crept slowly on, and in due course reached and cut up the second ice slope, and at length stood in what Schaller called the 'Gabel,' from which the summit is at last visible. Schaller glanced upwards and shouted joyfully, 'Wir haben es

gemacht.' Jossi 'jödelled,' which is a sure sign that things are going right. The last slope was of snow, in apparently perfect order, and the remainder of the ascent would be plain sailing. We almost ran up, and at 3.5 we stepped on to the summit with more shouts from Schaller and jödels from Jossi, who at once set to work to lighten their burden of provisions. My appetite, as usual, had preferred to remain behind at the hut, so I turned my back on such materialism and gave myself up to the somewhat melancholy charm of the silent scene; to quote Shelley—

A scene

Where musing solitude might love to lift
Her soul above this sphere of earthliness;
Where silence undisturbed might watch alone,
So cold, so bright, so still.

In the case of a paper on a climb in the Alps it seems to have become the rule to omit any mention of the view, probably for the excellent reason that it has been already described *ad nauseam*; but I feel that I cannot pass over the winter view from the Dom in absolute silence. It has been asserted that winter views from mountain-tops are flat and monotonous, and suffer from a lack of atmosphere; but surely the persons who make such statements must be wanting in æsthetic perception. It is true that there is a certain lack of variety of colours. Green is almost entirely absent from the picture, but that is fully compensated by a marvellous gradation of blues and yellows in the lights and shades of the snow, which quite redeem the winter landscape from the charges of flatness and monotony.

Nor on that January afternoon was there any lack of atmosphere. The Italian plains lay basking in a soft transparent haze of shimmering sunlight, and all around the most distant peaks stood out with absolute clearness, preserving at the same time the impression of graduating distance, so necessary to picturesque effect in a panorama. This was possibly due to the lateness of the hour at which we were on the summit; or was it perhaps that I looked at the scene through the softening halo of an elated imagination?

Although there was but the merest breath of wind, and we were bathed in brilliant sunshine, the cold was most intense; the temperature must have been many degrees below freezing point. Consequently at half-past three I was quite ready when Schaller suggested that we should begin the descent, as it was important that we should reach the Festjoch before darkness closed in. We raced down the ridge as fast as cir-



View of the Alps

from the Pointe de la Vierge

The Weisshorn from the Pointe de la Vierge

January 11th 1871

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A scene

Where moving solitude might love to lift
Her soul above this sphere of earthliness;
Where silence undisturbed might watch alone,
So cold, so bright, so still.

In the case of a paper on a climb in the Alps it seems to have become the rule to omit any mention of the view, probably for the excellent reason that it has been already described *ad nauseam*; but I feel that I cannot pass over the winter view from the Dom in absolute silence. It has been asserted that winter views from mountain-tops are flat and monotonous, and suffer from a lack of atmosphere; but surely the persons who make such statements must be wanting in aesthetic perception. It is true that there is a certain lack of variety of colours. Green is almost entirely absent from the picture, but that is fully compensated by a marvellous gradation of blues and yellows in the lights and shades of the snow, which quite redeem the winter landscape from the charges of flatness and monotony.

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Sydney Spencer, Photo.

Swiss Electric Engineering Co.

The Weisshorn from the Dom Hut.

January 11th, 1896.

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cumstances permitted, now reaping the benefit of the liberal step-cutting, just reaching the desired point as the last glimmer of daylight disappeared. The lantern was brought into requisition for about an hour until the moon rose, after which the rest of the journey to the hut was accomplished by brilliant moonshine. The rocks from the Festijoch to the glacier were, if anything, more exasperating than on the ascent, but we were quickly over the glacier and down the moraine, reaching the hut at 8.30, exactly sixteen hours since the start. This time is, I know, terribly slow, but I doubt whether it could have been shortened very much, as during the whole climb we only rested twice on the ascent, again on the summit, and not once coming down. The deep powdery snow on the lower portion of the mountain, and the unexpected amount of step-cutting on the ridge were no doubt chiefly accountable for our slow times. I think I may say that the day was on the whole a favourable one for the ascent, as the weather could not have been more perfect, and the difficulties were merely such as to delay our progress, and could not be called really serious, although altogether the climb was an infinitely bigger undertaking than it appears to be in summer, when it is not an expedition which would attract the Alpine gymnast. As we had intended in any case to spend the second night at the hut, our first thought on reaching it was to give the people at Randa a signal which we had arranged in the event of our safe return. In the exuberance of our spirits we lighted no less than eight bonfires simultaneously, and then went into the hut to a well-earned supper and bed.

Our expedition had rather a comic finale. Schaller left the hut early the next morning, as he wished to attend Mass at Randa, leaving us to follow at our leisure later on. When we reached Randa Schaller met us with the news that a telegram had been received from the Monte Rosa Hotel saying that the Zermatt villagers wished to know whether I should like music to celebrate our return. 'Good heavens! On no account should I like it,' said I; 'and, Schaller, see that no demonstration of any kind is made, especially as I do not consider that the occasion is such as to warrant it.'

In blissful ignorance of the people I was dealing with I thought the matter was done with, and settled myself in the sleigh to enjoy the drive up to Zermatt. Alas! we had no sooner appeared in the square in front of the Monte Rosa, where the villagers had assembled, than the village band struck up an air which sounded suspiciously like a Zermatt-ised version of a certain music-hall classic, known as 'Ta-

ra-ra-boom-de-ay.' I am afraid I used bad language and disappeared at once into the hotel, where I was thankful to find that none of my companions were at home to laugh at my reception.

I ought, I suppose—not that I feel any special qualification for doing so—to conclude with a few remarks on winter climbing. It cannot be said to have become very general, and I think the shortness of the day and the great risk of frostbite will always be a serious barrier to its attaining real popularity. The conditions of the mountain have to be considered much more carefully than in summer; also it is essential to start with a reasonable chance of fine weather, which is of importance even on more modest expeditions. This we found to our cost, when we lost our way crossing the Gemmi one January in a blinding snow storm with a Föhn wind; and so probably another party also found recently, after spending the night in a snow storm on the rocks of a certain minor Oberland peak. As a rule, however, winter weather in the Alps is more settled and less subject to sudden changes than in summer. The most fatiguing part of the climb will generally be found to be on the lower slopes, where the snow is almost always in the powdery state. The air is, of course, very invigorating, and you have not to endure the discomforts of excessive heat, as is frequently the case in summer, although, for my own part, I find excessive cold the harder of the two to bear. It is not necessary to dwell on such matters as provisions and clothing, which depend so entirely on the personal requirements of the climber; but too great a stress cannot be laid on the importance of the proper protection of the feet from frostbite. I have been told that rubber snow-boots, made with an extra thick sole nailed in the usual way, have proved very successful for winter work. The discomforts and drawbacks of winter climbing are easy enough to enumerate, which makes it all the more difficult to say wherein lies its charm. I am inclined to think that, beyond the novelty of the conditions, there is nothing more than the curious fascination which climbing exercises at all times over its devotees, who will often go through untold hardships for what is apparently a very slight reward. Added to this there is, perhaps, the small joy of feeling that you are possibly the only human beings standing on that day on the topmost pinnacle of one of Nature's cathedrals, and, after all, how many of us are proof against even such small joys? The winters most suitable for climbing are, without doubt, those in which the snowfall has been but moderate. After

one such as that in the latter part of January last, when the mountain-sides were continually swept by the dangerous 'Staub' avalanches, climbing may be said to be quite impracticable. Such a winter is, however, exceptional, and at Zermatt in ordinary seasons there is very little danger, and a certain amount of climbing could generally, I think, be counted on. The smaller peaks, such as the Mettelhorn, the Ober Rothhorn, and the Hörnli, are fairly easy, though fatiguing, and most of the great peaks on the eastern side of the valley would probably be practicable. Those on the western side, with one or two exceptions, such as the Wellenkuppe, will, I fancy, always be very formidable undertakings. Still, as Mr. Dent once said, 'impossible' is a word which now finds no place in the Alpine dictionary, and it is difficult to fix a limit to the powers of some climbers. Should any one be tempted to try the winter ascent of such peaks as the Obergabelhorn or the Dent Blanche, he will do well to take every possible precaution against frostbite, and to remember, if only for the sake of his toes, that 'discretion is the better part of valour.'

THE ASCENT OF ACONCAGUA AND TUPUNGATA.

THE following telegrams from a member of Mr. FitzGerald's party appeared in the 'Daily Chronicle' of February 17 and April 16, and are here printed with the permission of the Editor:—

'Mendoza : February 15.

'Mr. Vines, accompanied by a porter, has succeeded in emulating Zurbriggen's feat in reaching the summit of Aconcagua. Mr. FitzGerald was again doomed to disappointment, being compelled to turn back after reaching an altitude of 20,000 ft. This was his sixth gallant but unsuccessful attempt to reach the summit, and fell short by 3,000 ft. of what he accomplished a month ago.

'The expedition, before making its final attempt to scale Aconcagua, camped for fourteen days at an altitude of 19,000 ft.

'Mr. Vines reports that the summit of the mountain is porphyritic, and that there is no existent trace of it having a volcanic origin. The barometer at the top fell 12 in., and the thermometer to 7° F. An hour was spent on the summit.

'On reaching the top the weather was fortunately fine, and

the heliograph was used for the purpose of communicating with those below, but only with very partial success, as the clouds that hung round the mountain continually obscured the sun, while all attempts were finally put a stop to by a gale which arose.

'Mr. Vines and his companion measured the top, which formed a small plateau, and found it 70 yards square. Both, however, suffered intensely from the rarefication of the air, which rendered respiration exceedingly difficult, otherwise a longer stay would have been made.'

* Vacas (Argentina), Thursday.

'On March 25 Mr. Stuart Vines and Zurbriggen, the Swiss guide, with one porter and mules, started from this place up the Tupungata Valley. The way was very bad, and the mules were a source of great trouble. In a three days' journey they covered 40 miles to the S., and on the 28th bivouacked at a height of 15,000 ft.

'On the 29th they attempted to reach the top of the mountain. The weather was again very bad, and when they were 2,000 ft. from the summit a storm forced them to descend, and they returned to Inca.

'On April 3 another start was made with three porters and provisions for a fortnight. A second attempt was made on the 6th. The wind was strong and the cold intense, owing to the lateness of the season. The party had to wait an hour for the wind to blow over. It was still worse 1,000 ft. from the summit, and again Mr. Stuart Vines was compelled to descend.

'On the 8th the party bivouacked at night at a height of 17,000 ft. in a terrific storm of wind, with a temperature of 5° F. All suffered from the cold, and had to descend to the valley.

'A fourth attempt was made on the 11th. The party slept at a height of 17,000 ft., and started for the summit on the 12th at 7 o'clock with no clouds to obscure the view. When they had reached a height of 20,000 ft. all the porters were forced to descend, as they were suffering badly from the altitude. Mr. Stuart Vines and Zurbriggen expected to reach the summit at two, and they actually arrived there at 4 o'clock. The virgin peak is 21,000 ft. high, and volcanic. They had a magnificent view of Aconcagua, standing up absolutely alone in the Cordilleras. An active volcano was observed 20 miles to the W. The temperature was 10° F. A strong wind was blowing.'

MOUNTAINEERING IN THE CANADIAN ROCKIES.

By S. E. S. ALLEN.

III.

A DESIRE to make the further acquaintance of Mount Assiniboine and its beautiful environment drew me to Banff in the summer of '95, in company with my friend Dr. Howard Smith, and on July 3 we left Banff with a train of two assistants and six ponies for Simpson Pass. Heely Creek was a foaming torrent, and it was with a feeling of relief that we finally camped in the broad meadow at the base of Simpson Pass.

Owing to the late advent of the summer, the summit of the pass was still buried under deep snow, whose surface crust quite failed to bear our weight, so that the efforts of our caravan to struggle across were both amusing and laborious.

In crossing the tributary * next morning occurred an incident which at the time served for those who witnessed it to offset, but for the participant to augment, the chill of the dismal weather. My friend Dr. S., in crossing this swollen stream, failed, through no fault of his own, but owing to the enormous force of the current, to arrive at a satisfactory place on the further shore. The pony, with the obstinacy characteristic of the cayouse, began a frantic struggle to ascend the precipitous shore. Foreseeing a catastrophe, and fearing to be submerged beneath the animal, whose posture was nearly vertical, Dr. S. dropped into the river, intending to swim ashore; but the strong shore current began to carry him rapidly out to the confluence of the two rivers, where they were thundering in wild rapids and whirlpools.

I happened to have reached the shore below, and shouted for assistance to one of our men, who was not far away; but my voice was drowned in the din of the waters. I made a rapid calculation of the probable path which Dr. S. would follow, and, for want of anything better, bent down a long willow bough until its end was submerged in the foaming water. He fortunately came in contact, and managed by its aid to reach the shore. Meanwhile, the pony had been rescued by one of our assistants.

The passage of the larger Simpson, further down the stream, was made without incident, though taxing the horses greatly. It is amazing to what size these streams, ordinarily presenting no difficulty, can grow in the early summer.

Ascending the steep trail upon the left side of Walandoo Creek, we found upon reaching the ford, some 900 ft. above the Simpson Valley, that it would be madness to risk the horses in such a seething cauldron.

* The name 'Shuswap River' would seem fitly applicable to this stream, as perpetuating the Indian name of Simpson Pass. I have for this reason known it by that name.

This little torrent, though of no great size, has a very steep descent, and at such a time neither man nor beast could have found a footing. It became necessary to continue to ascend the left or western bank, heavily timbered and strewn with débris. Despite all our precautions, one of the ponies succeeded in wedging a leg between two rocks. The delay in removing his pack and prying the rocks apart caused us to be practically benighted upon this steep bank, where, with no pasture for the ponies, we tried to forget, in soaked sleeping bags, beneath a hastily erected tent, the inclemency of the weather.*

Safely crossing the Walandoo Creek next morning, July 6, we continued to ascend the right bank. Every spray of fern and moss, every bough and wild flower was a study in silver filigree, or in rare intervals of sunlight radiant with flashing jewels. These our caravan ruthlessly destroyed and was generously soaked in consequence.

At length, toward evening, Walandoo Lakes appeared, at the base of two great rocky masses of the same name. Here our ponies forgot their recent fast in the abundance of a meadow of the lake shore, while we, drying by a roaring camp fire, discussed the possible result of the morrow's attempt at crossing Walandoo Pass—which looked exceedingly snowy—to Lake Assiniboine.

And this traverse I shall long remember with mingled feelings. By 8 o'clock we were under way, skirting the left shore of Walandoo Lake, on whose inky surface, in the shadow of the sombre walls, floated great blocks of winter ice, one of which was more than 20 by 30 yards. After leaving the lake, seeing that the open meadows behind it were deep with snow, I bore to the left, but in so doing went too far and got into worse difficulties. The ponies, breaking through the weakened crust, were rendered helpless. The packs we carried over the worst portion.

The worst place was a steep ridge just to the left of my five days' bivouac of the previous September. In some way, by one device and another, we finally reached it, and in the deep snow partook of lunch, discussing the situation.

There was still about 500 ft. to be covered, and quite a traverse to be made to the summit of the pass, which was considerably to the right, and the whole intervening distance seemed covered with deep snow drifts. Among and around these we picked our way, dragging the ponies over the worst places, and at 4 o'clock were upon the crest.† Clouds obscured Mount Assiniboine entirely, and the cold wind caused us to hurry down the other side. In spite of haste we were overtaken by night in the fallen timber of the valley,

* The greater rainfall of these British Columbia valleys is only too apparent to one crossing a pass in the watershed from the Alberta side.

† To a striking pillar on the N. side of Walandoo Valley I applied the name of 'The Pinnacle,' and that of 'Pinnacle Peak' to the peak to which it is nearest. The Pyramid, and the amphitheatre behind it, suggest a similar feature on the continental watershed in the valley of Cataract Creek, and already referred to under the name of 'Obelisk.'



Swan Electric Engraving Co.

LAKE AND MOUNT ASSINIBOINE.

and made the ascent to Lake Assiniboine in almost total darkness, camping on the shore. I subsequently blazed a trail from Walandoo Lake over to the North Fork trail, where the Assiniboine Creek flows into it, as will be mentioned hereafter.

Lake Assiniboine, as I have mentioned, lies at the foot of a semi-circular wall whose crest shows a number of individual peaks and aiguilles bearing beautiful hanging glaciers, yet overtopped by the great peak itself with which it is connected beyond. Under a blue sky and warm sun Mount Assiniboine, shedding clouds of mist continually down its southern sides, and apparently quite inaccessible from this point, amply confirmed my vivid memories.

Whether to proceed from this point to the right or to the left, whether to first visit the S.W. or the S.E. side of the peak, had now to be decided. I chose to go to the right, partly because it would take me down toward the Kootenie River, which I hoped to visit *via* an unexplored region, and partly because of my previous observations on Mount Temple and elsewhere, that in general the S.W. or S. slopes, or more particularly the S.E. side of the S. arête, offered in these peaks of the limestone series the best chance of ascent.

We had found the fallen timber so annoying in ascending to the lake that we tried the experiment of descending by a 'short cut' to the valley of the North Fork. It was worse here, as it proved, for we encountered a chaos of fallen logs strewn over a series of ledges, over which one of the ponies took a 'header' for 40 ft., and the others followed with more difficulty and less rapidity. We saw that we must make immediately for the river bottom, some 1,000 ft. below. The heat was most oppressive. The descent took over four hours, and looking up at our route I could hardly see how we had descended it in safety. On the whole, however, remembering that we were in British Columbia, it is doubtful if we would have made much better progress with the forest green and standing.

On the right or W. bank of the North Fork, where we forded, we found, as I expected to find, a faint Indian trail—or what had been a trail before the fire had swept the valley—of which I had seen a vestige the previous year. Following this to the bend of the river, where it begins its southern course after rounding the W. spur from Mount Assiniboine, we camped in a luxuriant meadow at the foot of the Walandoo peaks, whose whole S. side was clearly seen. These peaks from the Walandoo Lake—their N. side—appeared as a consecutive wall. From the S., however, they show a decided amphitheatre, enclosed by the three higher rocky peaks, the central one being highest, while two smaller rocky peaks, a little to the S. of the other three, complete the little group. The highest of the group must be about 10,000 ft., or perhaps more. They would be by no means easy, and I hoped later to have time to attack them. The view from their summits should be very grand, owing to their central position.

Where the valley bends southward two small streams join the

North Fork, the smaller from the left flowing from a narrow cañon or gorge in the W. Assiniboine spur, while the larger flows from a semicircular snowy peak to the right or W. The country became sparsely wooded, and the trail, such as it was, continued to follow the right bank until the valley broadened and the river banks grew low. Then it ceased, the proper method being simply to cross and recross from flat to flat. It is fascinating work to follow these Indian trails. They show a truly wonderful amount of ingenuity in avoiding obstacles and traversing difficult places, and to follow them smoothly and without unnecessary delay, particularly for the first time, is an art both difficult to acquire and delightful to practise, involving, in addition to the skilful use of the senses, a certain subtle instinctive element quite analogous to the finer points of climbing, and acquired only after considerable practice. There are many of these trails scattered throughout the mountains, in general following the banks of streams, but often crossing the high divides and traversing thick woodlands.

It would be comparatively easy to put these trails in excellent order with small outlay, and thus establish a quite complete system of routes for alpine and tourist travel.

Some 3 miles below the bend there was a decided depression in the ridge upon the left, whence a small stream issued. As I wished to adopt the easiest and shortest approach to the S.W. side of Mount Assiniboine, I determined to camp here and ascend the stream next day. As it was still early in the afternoon, however, we proceeded round the W. spur or peak, in order to examine its S.W. side. This did not look encouraging, and for horses was absolutely impossible. From this peak there ran a low slate ridge to another peak of similar height $2\frac{1}{2}$ miles to the S., and forming the left side of the North Fork valley. Beyond this latter peak a valley evidently opened from the North Fork valley to the N.E., and another slightly nearer to the S.E.

We returned to the gorge, and next morning succeeded in getting a pony with a week's provisions up through the gorge, and into an amphitheatre above. The scenery here was very wild and rough, and the peaks enclosing the amphitheatre were evidently the same that we had seen from Lake Assiniboine. They would offer no particular difficulty of ascent from this point. There was a broad snowy pass upon the right, overlooked still further to the right (S.) by the sharp rocky peak forming the N. turret of the slate ridge. Its southern extremity, as I mentioned, was a similar peak. These I have called respectively the N. and S. turrets. Their elevation must be about 9,000 ft. above the sea.

I saw that to reach Mount Assiniboine I would be obliged to continue round the S. turret, and reach the valley lying E. of the slate ridge. The gorge was quite rich in minerals, crystals of sulphur, alum, and iron pyrite occurring in some abundance.

The peaks upon the W. side of the valley, though not high, were bold and rugged. One in particular, somewhat higher than the Walandoo peaks, bore upon its northern face a considerable

mass of hanging glacier, much resembling in its shape the N. face of Mount Bonney at Glacier.

We camped for the night at the foot of Portal Gorge, as we called it, in the grassy meadow. The atmosphere was becoming very hazy, and the aspect of the Walandoo group to the N. was very weird and striking.

Our difficulties began again next morning, when we encountered the first of a series of cañons some three miles below our camp. The trail was of no assistance, for it was quite obliterated by débris. From this point until its junction with the large stream from the E. the North Fork trail is of little use. The banks are steep and the upper portions strewn with fallen timber. The trail is well indicated along the earth banks by the numerous footmarks of our caravan.

At length, having ascended an unusually steep bank from the river to the plateau above, I saw that we were directly below the lowest portion of the slate ridge, and not far from the S. turret. So, camping here, we ascended to obtain a view of the region to the E., toward Mount Assiniboine, climbing the dry rocky bed of a stream, and finally, in a drenching rain, a rocky rib running up to the top of the ridge, 8,000 ft. above the sea.

The rain had stopped, and the clouds lifted sufficiently to show us a scene for whose grandeur we were quite unprepared. Eastward from the N. turret, whose summit was visible, five great peaks, their summits wrapped in clouds, formed the N. and E. boundary of a narrow valley containing at its head two lakes, one of a light blue, the other a jet black. The streams from these united to form a very winding river, which, flowing down the valley, was hidden by the S. turret from our view. We could see, however, that it must join a stream observed in a valley further to the right, running N.N.W. to S.S.E. The valley was as black as charcoal, as indeed was the valley at our feet, except that at the head of the blue lake was a patch of vivid green, indicating splendid pasture. This fact I carefully noticed; but for that patch of green I should not have ventured subsequently to take horses into this valley.

While we were debating which peak was Mount Assiniboine, the clouds parted and settled the question. East of north, high above all the others, rose the great peak, its summit a sharp pinnacle,* and bearing upon the narrow upper southern face a snow-covered glacier. Below this ran a series of steep black cliffs, on the left or W. extremity, several hundred feet in height, becoming much lower upon the E. or right. The middle portions of this face were perfectly white with snow, though, as a later experience showed, it does not remain all the year on these middle portions of the southern face. The lower portions of the mountain were great quartzite ledges, down which mountain torrents had worn steep

* As seen from this point; but as seen from Walandoo Pass its long summit ridge is conspicuous, while from the N. its appearance is even more like a pinnacle.

gorges. The summit could not be less than 3,500 to 4,000 ft. above us, or 11,500 to 12,000 ft.* above the sea, and over 6,000 ft. above the river bottom.

I speak of the 'southern face,' because no climber would care to look twice at the S.E. and S.W. arêtes, except at their upper portions. The former began as a cliff of about 900 ft., culminating in a lesser peak, succeeded by a deep depression, and rising from the ridge connecting Mount Assiniboine with the next peak to the S. This cliff, in fact, as I afterwards discovered, is the profile of part of the E.S.E. face. Above it the angle of the arête is more respectable, though this is balanced by the serrated condition at the level of the 'black cliffs.' Just below the summit plateau it becomes, as does the S.W. arête at this point, easy until the two meet to form the S. extremity of the Assiniboine summit ridge. The cliffs upon the S.W. arête are less lofty than the first are on the S.E., but more numerous and very steep. It rises from a ridge connecting Mount Assiniboine with a very sharp *aiguille* to the S.W.—the 'Thumb,' as I named it, on account of its appearance from this point. Up to this depression there rises a steep, but accessible, snow couloir, from a *névé* basin at the base of Mount Assiniboine. There also runs, from the middle portions of the S. face and half-way between the two arêtes, a subordinate arête, of which I shall have more to say hereafter. The two rock peaks S. of Mount Assiniboine, on the continuation of the S.E. arête, though not so high, would not be easy of ascent. To the northerly, at a later time, I applied the name of 'Shäffer'—for Dr. Charles Schäffer, of Philadelphia, a distinguished authority upon the flora of the Rockies. The black lake lay at the foot of Mount Assiniboine, the blue lake at a lower level to the left of the 'Thumb,' and enclosed by an amphitheatre of rocky peaks, containing much reddish and yellowish limestone, of which the one E. of the N. turret was highest—approximately 11,000 ft. This wall was, of course, the S. side of the peaks seen from Lake Assiniboine; but, on account of its southern face, it contained less ice and snow, though several glaciers were observed, and to the left of the 'Thumb' a blue ice couloir, filled with *séracs* and lined by a gaping *schrund*. The contrast of the blue sky and ice, white snow, and the colours of the rocky peaks above, with the blackness of the burnt valley below, was, from its novelty and variety, very effective.

W. and N. the winding North Fork shone like a silver snake in its beautiful valley, while S.W. rose a graceful semicircular group bearing a fine *névé* area, to which I applied the name of 'Topham,' that of the well-known explorer in the Selkirks.

It was not a day to linger and enjoy such a scene, and the cold wind made our fingers very numb as we sketched and took notes and bearings. Photographs of the panorama were not procured until a later visit.

* As then estimated. A table of my triangulated heights of this and adjacent peaks will be appended to a subsequent paper.

GLACIER EXPLORATION AND NEW ASCENTS IN NORWAY IN 1896.

By WILLIAM CECIL SLINGSBY.

SLOWLY but surely the innermost recesses of the huge ice and snow-capped *fjelle* of central Norway are being revealed to those lovers of wild nature whose enthusiasm nerves them to endure the fatigues and discomforts which must of necessity be overcome when wandering for several days amongst the solemn solitudes of so weird a land. The Justedals-bræ, which, only a few years ago, was considered to offer so many terrors to the few persons who wished to cross from east to west, or *vice versa*, is now annually traversed in many directions by numerous tourists, some of whom, having absolutely no knowledge of mountaineering, run very much greater risks than they are aware of, as their guides, with some notable exceptions, have not yet mastered the elements of snow craft. Nearly, but not quite all, of the glacier arms radiating from this great snow field have been, let us say, discovered. The glaciers of Gjegalund and Aalfoten-bræ* have been annexed by mountaineers and turned into a playground. The Spørteg-bræ, east of Justedal, has also been crossed and recrossed.

A little further east again, there is a wild *terrain* where there are about a hundred square miles of glaciers; amongst these the Harbards-bræ and one or two others have been crossed by a few Norsk and English travellers; but until last year no one had had the hardihood to traverse them from end to end and to climb the wild, ice-capped Hestbræpiggen, whose thick coping of ice, glistening in the noonday sun, has evoked the admiration of thousands of travellers on their way between Rødsheim and Skjolden. So far back as the year 1872 I resolved to explore this grand icy mountain, but now, honestly, I feel glad that I have not done so, because the Hestbræpiggen have been conquered by a lady, and, what is better still, by a Norsk lady, Fröken Therese Bertheau, who, in the year 1894, made the first lady's ascent of Skagastölstind. As her very severe but most successful expedition of last summer deserves to be recounted in the 'Alpine Journal' I send you, with Fröken Bertheau's leave, her own account, which she sent to me. The plan of starting late in the mornings and of walking through the nights, good or bad, was arranged by her guide, but, apparently, some unnecessary discomforts seem to have been met with by changing night into day.

'On August 8 Dr. Arentz, Thorgeir Sulheim, and I [Fröken Therese Bertheau] started from Skjolden at 9 A.M. in very fine weather. We walked up the Mörkrisdal as far as Dalen sæter, where we took to the right to get on to the plateau where Svajdals sæter lies, 8,000 ft. above sea level. It is now in ruins, but is most picturesquely situated, with a grand view of the

* *Alpine Journal*, vol. xiv. p. 380.

Spørteg-bræ. Here we had our dinner at 3 P.M., beside an eloquent little brook, and after two hours' rest we set off again northwards, till we came to where the Gravdal hills separate the Svajdals-bræ from the Harbards-bræ, about 4,500 ft. above the sea. Here we took an hour's rest and had supper. After that we went down into the valley of Gravdal and on to the Harbards-bræ, which we reached at 9.30 P.M. We had a little step-cutting to get upon the glacier, but after that did not meet with any difficulties except in avoiding the crevasses, which kept us awake. A cold wind blew in the valley, but, as there was none on the glacier, we were able to enjoy the beautiful panorama that now presented itself to our enchanted eyes. It was simply magnificent, a marvel of beauty, a sight that made me feel miserable and blissful at the same time, and sent a strange thrill through me. Above us was a clear cold sky with a thin moon; to the S. the gigantic Horungtinder, which looked like formidable ghosts in the last light of the fading day; to the S.E. the fantastic Smørstabtinder, and to the N. and N.E. Tverdalskirken, Tundradalskirken, Haalaatinder, and Hestbræpigger. It was a grand sight and one never to be forgotten.

'We now crossed the Harbard glacier from the S. to the N., which had never been done before, though Englishmen and Captain Morgenstjerne have crossed it in other directions. It was most interesting. We had intended to climb Tverdalskirken in the morning, in order to see the sun rise; but when, at 3.30 A.M., we got to the foot of it, the mist came dancing thickly round us, so to keep warm we trudged about for several hours till at last we made up our minds to climb the mountain after all. The ascent was very easy up good rocks, and it took us only three-quarters of an hour to reach the top. Thick fog still surrounded us. We got to the top at 7.30 A.M. This mountain had been climbed before.

'On our further march northwards we fell in with some tremendous crevasses; some of them seemed big enough to swallow whole cathedrals, and it took some time to turn them. We passed between Tverdalskirken and Tundradalskirken, went down to Sota tarn, and reached Sota sæter at 11.30 A.M. on August 4.

'Sota sæter is a charming place on the Lia lake. Here we spent a very pleasant day and got a good night's rest, which I was in sore need of, as I had not slept since we left Skjolden. The two others had slept a little on the top of the mountain.

'Next day we started at 9 A.M. in a south-easterly direction, went down into Tundradal, crossed the river, and got to the plateau on the other side where the Haalaa-bræ begins. We reached the edge of this glacier at 3.30 P.M., and half an hour later put on the rope. The Haalaa-bræ is the most crevassed glacier I have ever seen. Our first object was to climb the eastern Haalaatind. It took us 2½ hrs. to get to the foot, during which time we had to cross at least a hundred crevasses. The peak was easy and it only took us half an hour to climb it from the glacier. We built a cairn and found no traces of any former visit. My companions gave the peak

the name of Tussetind, as an abbreviation of my own name Therese. Tusse or Turse is the Norsk for goblin or sprite.

'Tussetind is about 6,700 ft. high. The view was very grand. We descended by an easy arête on the E. side, and at 8 P.M. we reached a col below. We had now another night's walk before we could reach Høidals sæter, on the shores of Høidals lake. We passed to the E. of the big lakes at the mouth of Midtdal, and had a troublesome walk over some very vicious rocks, which did their best to irritate us in the dark of night, in which effort they did not, however, succeed. At daybreak on August 6 we waded a river coming from the Hestbræ tjern, and at 4 A.M. reached Høidal sæter, where the Doctor and Sulheim slept for 6 hours.

'At 11.30 A.M. we set off for the Hestbræpigger. We went due N., and at 4.40 P.M. reached the glacier, where we found very few crevasses. Two hours' walk over the glacier brought us to the foot of the western peak of the Hestbræpigger. We climbed it by a very narrow western ridge in 35 min. and built our cairn on the top. This peak is 6,895 ft. high, and the Doctor gave it the name of Sulheimspiggen, in honour of our dauntless companion and guide.

'Our next goal was Nørstedals sæter by way of the Midtdal, a route which proved to be much longer than it had promised to be when we were on the top of Sulheimspiggen.

'We left the top at 8.30 P.M., and at 11.30 it was pitch dark, and it seemed quite hopeless to proceed any further. Just then a capital idea struck Sulheim. He threw himself down on the ground and began to grope about in a most perplexing manner. Suddenly he struck a match and in a minute had made a blazing fire of reindeer moss, which the Doctor kept burning for 4 hrs. It burned with long, narrow, bluish flames, which gave out a beautiful light and much warmth, and which looked most picturesque in the weird surroundings. After a while Sulheim was snoring, and for about half an hour I too slept soundly, which much refreshed me.

'At 7 A.M. we reached Nørstedals sæter, just as some rain-drops were beginning to fall, the first we had met with during the whole expedition. Here we had some 5 hrs.' sleep, and dinner at 2 P.M., after which we went down the Fortundal and reached Fortun at 10 P.M., very content with our 5 days' expedition.'

THE PROPOSED JUNGFRAU RAILWAY.

WE have received a pamphlet or prospectus bearing this title enclosed in a portfolio with a number of well-executed maps and plans, and a fine panorama of the view from the summit of the Jungfrau. The following extract (p. 10) gives some details as to the route proposed to be followed:—

'The Scheidegg station of the Wengern Alp Railway, 2,060 m. above sea level, is supposed to be the starting point of the new line. From here the Jungfrau Railway will run on the western slope of the Fallbodenhubel, making straight for the foot of the Eiger

Glacier. Thence it will turn due east, and later on due south, in a tunnel winding round the solid body of the Eiger as far as the Eiger station, 3,100 m., which is to be laid open by galleries similar to those we find along the Axenstrasse. The tunnel will then continue in a straight line towards the Mönch and the Jungfrauoch, which it will reach at 105 m. below the surface, and will finally curve round the uppermost solid block of the mountain, reaching its endpoint on a plateau well known to the guides, at 4,100 m. above sea level. This platform lies about 65 m. below the snow-covered summit of the mountain, measures 25 m. by 30 m., and is free from snow during the summer months. From the level a lift, 65 m. high—probably something after the style of the American elevators used for building of twenty stories (*sic*) and more—will take the enterprising tourist to the highest summit of the Jungfrau, 4,167 m. . . . A corkscrew staircase will be fitted, so that the alternative will be given of doing the distance from the terminus of the line to the summit on foot. Members of the Alpine Clubs will be enabled to reach the summit of the Eiger from the Eiger station in comparatively short time. Similarly, being saved the exertion of a difficult ascent, and starting from the Jungfrau in a S.W. direction, they will have a much better chance for the grand glacier tour across the Aletsch Glacier and up the Eggischhorn.'

It will be noticed that the whole line above the Eiger Glacier station will be in tunnel, and the stations excavated galleries or caves, resembling the dwellings of ancient rock cities, or the retreats of hermits. Much of the success of the scheme would seem to depend on the verification of the assumption that the tunnel will be not only weather-tight, but exempt from changes of temperature and consequent infiltrations and rockfalls.

Should the belief of the promoters in these respects prove well founded, and should sufficient labour be available, there seems no mechanical reason why the line should not be made. The most formidable objections raised to the project in Switzerland seem to have been made from a sanitary point of view.

A disproportionately large portion of the pamphlet is devoted to an attempt to prove that on the score of danger to health no objection can properly be taken to the conveyance of a person in good health and of sound constitution from a level of 2,000 m. to one of 4,000 m. within two hours. The promoters quote a sort of affidavit from the members of a representative committee of the Swiss Alpine Club. 'We,' the committee write, 'having carried out ascents such as those of Monte Rosa, of the Wetter-, Schreck-, and Finsteraarhorn, of the Jungfrau, &c., are able to state from our own experience that we have never personally felt the influence of rarefied air. We may add that on returning from those ice-bound peaks we *always felt fresh and fit for work.*' In the fine glow of their enthusiasm the promoters go on to assert that 'what has been termed "mountain sickness" can always be traced back to an overdose of alcohol, or to a wrong diet, or to over-exertion during the ascent.' We should hardly like to go so far, although

no doubt the poor food and nasty drinks often supplied in Alpine inns may account for many of the indispositions of their guests. But we are disposed to agree with the authors that no great amount of physical suffering and comparatively few sudden deaths are likely to result from the success of such an enterprise as they contemplate, which has already its parallels in the Andes. They have, moreover, got an expert to illustrate their argument by an ingenious experiment upon two guinea pigs, one of which was shut in a revolving cage, where he had to work as on a treadmill, while the other was simply confined in a box. In the first case the guinea-pig became helpless and incapable when the pressure of the atmosphere had been reduced to the equivalent of that at 4,000 m., while the sedentary guinea-pig endured diminution to the equivalent of 8,000 m. before he gave in. This is meant to serve as an encouragement to the 45-franc-pigs whom it is proposed to transport in batches of at least a hundred a day to the top of the Jungfrau.

Æsthetic considerations are not neglected by the apologists. But they may find a still more pertinent one in the height (over 14,000 ft.) reached by railroad in the Andes. They boldly carry the war into the enemy's country, and denounce the athlete and the gymnast in good round terms. Having first met and crushed the mountaineer in argument, they proceed to throw him sops. He will be allowed, even if he climbs the mountain, to visit its summit *without a ticket from the company*; stations will be provided for him at the foot of the Mönch and Eiger, where guides will be in waiting to take him up those peaks; and he may even descend on foot to the Eggischhorn should he wish.

To come to practical details, the total cost of the line from the Scheideck to the top is estimated at 400,000*l.*; working expenses, &c., 8,400*l.* per annum; annual receipts, 28,800*l.*, the balance of which, after paying interest on 240,000*l.* four per cent. debentures, would provide a dividend of nearly 7 per cent. on a share capital of 160,000*l.* The trains are to be run by electricity, the motive power being obtained from the Lütchine. The scheme may very possibly be realised, and it would certainly be rash to treat it as a matter for ridicule. It will, no doubt, enable cripples to test to some extent the truth of Mr. Ruskin's dictum that there is no beauty above the snow line. It may be found possible to enjoy to some extent the glory of a summit view even under a shower of German and American adjectives and quotations from Bädiker. The artist who can endure a night or two with the guardians of the summit station—we regret no mention is made of any provision for *pensionnaires*—may secure some strange 'impressions' in the intervals between the trains. Years ago in these pages it was suggested that in the future one or two great peaks would probably be handed over as victims to that modern Minotaur the Circular Tourist. We deplore the profanation of the Jungfrau, and we sincerely trust the commercial success of the undertaking may not be sufficient to encourage rivals. But the Alps are wide and the world is wider.

Even should Switzerland become a nest of railway stations other regions will be left for those who do not share the ambition once expressed to the writer by an American from the Far West—'Sir, I wish to see the glasher region in a day from Bern without sleeping out; can you direct me to the best sample?'

NEW EXPEDITIONS IN 1896—(continued).

FUSSHORN. *July 13.*—In 1895 the Messrs. Hopkinson climbed the middle point of the range, which as seen from the Bel Alp or Brieg is, with the exception of the N.W. or highest peak, the most conspicuous point in the ridge.* On July 13, 1896, Messrs. C. Pilkington, W. C. Slingsby, E. Carr, and G. A. Solly gained the Fusshorn rocks from the Ober-Aletsch glacier, a little to the left of the great couloir running up to the N.W. of Messrs. Hopkinson's peak. Ascending over broken rocks and grass between this couloir and a secondary ridge running S.W. from the main one, they climbed a steep open couloir, the rocks of which were smooth, black, and water-worn, and crossed the upper part of the secondary ridge, gaining the crest of the main chain by steep and very loose rocks. A mass of flame-shaped splinters appeared to be the summit, but by skirting underneath it a less dangerous and higher point was found to stand on the junction of the secondary with the main ridge—a shaky tower of no great height. After they had swarmed up the N.W. end it was found that a narrow crest, part of which had to be passed by hanging on to the narrow flake of rock with legs dangling towards the Triest glacier on the east, led to a point some 150 ft. higher, but less conspicuous from many points of view, than the Messrs. Hopkinson's peak.

The descent was shortened by avoiding the couloir of black rocks and descending by the slopes on the other or northern side of the secondary ridge. The climb from the glacier to the summit, including halts, occupied 5 hrs., and the return to the same point less than 3 hrs.

ALPINE NOTES.

ADDRESSES OF MEMBERS.—The Honorary Secretary would be much obliged if any member could give him any information which would enable him to communicate with the following members, whose names appear in the Club list without any address, owing to their having availed themselves of Rule XVII. :—

J. R. Trevilian, elected 1863 ;

John Macpherson, elected 1865 ;

Major-General W. M. Campbell, † elected 1871.

* *Alpine Journal*, vol. xvii. p. 588.

† Major-General in 1872, present rank not known.

THE SOURCES OF THE MOUNTAIN LANDSCAPE IN TENNYSON'S POETRY.—Professor F. T. Palgrave, in his interesting new volume on 'Landscape in Poetry,' suggests that the scenery of the Idyll in 'The Princess,' 'Come down, O maid,' was drawn from the Pyrenees. I am able to correct this supposition, and to fix with some local precision the scenes in turn described in this poem. The 'wreaths of dangling watersmoke' were suggested by the Vale of Lauterbrunnen; 'the firths of ice' by the glaciers of Grindelwald, and 'the azure pillars of the hearth' by the smoke of cottages in the Vale of Meiringen seen from the ascent to the Brünig. All these particulars were given me by the poet himself. I may add, on the same authority, that the lines entitled 'The Voice and the Peak' were written at Ponte Grande, in Val Anzasca. Elbruz was changed to Elburz in the line

Elburz and all the Caucasus have heard,

for the sake of the sound, and not with any geographical intention. Tennyson's landscape of Mount Ida is mainly Pyrenean. He thought Wordsworth's lines, 'The Simplon Pass'—afterwards incorporated in 'The Prelude'—among the finest descriptive passages in his predecessor's works, and frequently repeated them.

D. W. F.

WINTER ASCENTS.—(1) *Schreckhorn and Wetterhorn*.—Mr. O. G. Jones, with Hans Almer and Peter Jaggi, climbed the Schreckhorn on January 12. They took $5\frac{1}{2}$ hrs. to reach the Schwarzegg hut the previous afternoon, and $10\frac{1}{4}$ hrs. to reach the summit from the hut. The descent to the hut was accomplished in a trifle over 4 hrs., and the remainder of the journey to Grindelwald in 2 hrs.

A week later Mr. Godfrey Ellis reached the summit of the Wetterhorn in 5 hrs. 45 min. from the Gleckstein hut. He had Ulrich and Hans Almer as guides, and found the climb to the hut very troublesome.

(2) *The Bernina*.—On Friday, February 19, with the guides M. Schocher and Schnitzler, Mr. E. L. Strutt left Pontresina at 9 A.M., reaching the Boval Hut, *via* the medial moraine of the Morteratsch Glacier, at 1.20 P.M. Starting again from there next morning at 1.45 A.M., by brilliant moonlight, they had crossed the 'Labyrinth' without difficulty by 8.30 A.M. and the plateau by 6 A.M. Proceeding up the arête, no difficulty was experienced till the last 200 ft., the rocks below being entirely free of ice and snow. On the upper portion of the ridge the powdery nature of the snow made great care necessary. At 8.15 they reached the summit, staying till 9.5, when they descended, regaining the Boval at 12.45 P.M. and Pontresina at 5 P.M. Throughout the snow was in admirable condition, and that in spite of the abnormal fall in the Engadine this winter.

(3) *M. Viso* (8,843 m.).—The Duke of the Abruzzi, A.C., undertook on March 3 the ascent of M. Viso, accompanied by Mr. F. Gonella, A.C. On account of the stormy weather they stopped at Crissolo one day, visiting the sanctuary of St. Chiaffredo and the *grotto* of Rio Martino. On the following day they started at 2 in the morning,

with the guides David Proment, of Courmayeur and Claude Perotti, of Crissolo, and two porters. They were obliged to turn back once before reaching the Col Sagnette, and arrived at the refuge Q. Sella (9,000 m.) at 2.20 P.M. There they slept, after having cleared away the snow which filled the refuge.

Next morning at 6 they set out for the peak of M. Viso, the weather being fine, the temperature relatively mild, and the air calm. As it was necessary, however, to remove the great quantity of fresh powdery snow while continually cutting steps in the hardened snow beneath, and to avoid the danger of starting avalanches, the ascent occupied 8 hrs.

At 2 P.M. they reached the summit, leaving as a souvenir a handkerchief tied to the iron cross erected there two years ago by Don Lanternino, the parish priest of Crissolo. By 6 P.M. they had returned to the refuge, where they passed the night. The day after at 9.30 A.M. they were at Crissolo.

ALASKA.—S. Vittorio Sella starts this month with H.R.H. the Duke of the Abruzzi for Alaska, with the intention of exploring in the neighbourhood of Mount St. Elias.

THE NEW EDITION OF MR. BALL'S 'ALPINE GUIDE.'—It may interest the readers of the 'Alpine Journal' to learn that, despite many delays caused by my broken health, the preparation of the new edition of this work has made considerable progress. Unless something unforeseen occurs, I hope to complete the revision of the entire text of the first volume ('Maritime Alps to the Simplon') in the course of the month of May. In that case the MS. would be placed in the hands of the printers in June, and that volume, with its numerous district maps, would be issued in the spring of 1898. A portion of the second volume is ready, and that volume will require less labour than the first. In order that I may not overlook any changes of importance to mountaineers, I should be very glad to receive notices of any alterations as regards inns, roads, paths, Club huts, &c., which may take place in the summer of 1897. All communications should be addressed to me *after* October 15 next at the Bear Hôtel, Grindelwald. W. A. B. COOLIDGE.

THE SNOW-FLORA OF MONT BLANC.—Professor Chodat of Geneva has contributed to the 'Bulletin de l'Herbier Boissier' an interesting paper on the flora of the snowfield of the *Col des Écandies*, to which are appended some remarks on snow-floras in general. Professor Chodat thinks it probable that the organism which gives rise to the phenomenon known as 'red snow,' whether called *Hematococcus*, *Protococcus*, or *Chlamydomonas*, is everywhere the same, viz., a form of *Sphaerella nivalis* Sommerfeldt. This species would then have an exceedingly wide distribution, having been found on Arctic and Antarctic snows, on the Alps, reaching an altitude of over 8,000 m. on the Col du Géant, the Carpathians, the Pyrenees, the Sierra Nevada, and the Andes. It was found by Professor Chodat on the Col des Écandies in the form of minute ellipsoidal cells of very variable size, the contents being of a colour varying from brick-red to purple-red; in some cases the

cell-contents were dividing into spores. Transported to Champex, at a height of 1,460 m., it produced biciliated zoospores, and was scarcely distinguishable from *Hæmatococcus lacustris*, an inhabitant of the Lake of Geneva. Among other organisms found on the Col des Écandies was a new species of *Raphidium*, which the author names *R. nivale*, and one belonging to a higher order of structure, a very little known desmid, *Ancylonema Nordenskiöldii*, hitherto found only in Scandinavia.

A. W. B.

GIFTS TO THE CLUB.—The following gifts have been made to the Club during the past three months:—Two water-colour pictures by Josiah Gilbert, 'Cima della Pala and Cima della Vezzana' and 'Valle di Cadore,' presented by Mr. D. W. Freshfield; a large number of Caucasian photographs by Signor Sella, presented by Mr. D. W. Freshfield.

REVIEWS AND NOTICES.

The Distribution of Plants on the South Side of the Alps. By the late John Ball, F.R.S. (Transactions of the Linnean Society of London, vol. v., part 4.)

THE geographical distribution of Alpine plants was a subject which exercised a great fascination on the author of the 'Alpine Guide,' and it is probable that it was never absent from his mind in his numerous expeditions. For the last thirty years of his life he was patiently accumulating the facts of distribution now issued in tabular form by the Linnean Society. How this came about is explained in the following paragraph from the introductory note by Mr. Thiselton Dyer, Director of the Royal Gardens, Kew, which accompanies Mr. Ball's work.

'Mr. Ball died on October 21, 1889, somewhat unexpectedly, after a brief illness. Some time afterwards his widow placed in my hands his botanical papers, in the hope that I might be able to extract from them something of permanent value which would record his long and patient labours upon the Alpine flora. The task was no easy one; and I think I should have shrunk from it without the encouragement of Mr. G. C. Churchill, the best surviving authority in the country on the subject, and of Mr. J. G. Baker, F.R.S., the keeper of the Kew Herbarium. As the result, I found that practically the whole of Mr. Ball's work on the flora of the Alps is concentrated in the elaborate table of the distribution of plants on the south side of the Alps, which is now submitted to the Society.' It is this table, extending over a hundred quarto pages, which constitutes the subject of this notice.

Mr. Ball set himself the task of tabulating the plants growing on the southern side of the chain of the Alps, so as to show their distribution within the range of the Alps and on the other mountains of Europe. The southern side was selected because of the richness and varied character of its flora, and because it had been less fully investigated. This region he divided into fifty

districts, of which the following are four taken at random :—Mont Cenis-Susa-Col de Clairée; Val d'Orca-Val Campea; Val di Cogne-Mont Emilius-Val Champorcher; Cadore-Sources of the Piave. These fifty districts are represented by as many columns in the table, and the presence or absence of each of the 2,010 species of plants occurring in the whole region is indicated for each district. This portion of the table consequently partakes of the nature of fifty local floras thrown into a form convenient for reference, and as such is of high interest to the Alpine wanderer. But the table is not confined to this. There are ten additional columns in which the occurrence in or absence from the other mountainous regions of Europe of these same plants is recorded. This feature of the work is of especial value to the student of geographical botany.

Though many sources of information have been employed by Mr. Ball in his compilation, the greater portion is based on the records of his own extensive explorations. Unfortunately, the records of the altitudes at which the plants grew were too incomplete to admit of publication; but, fortunately, a less detailed statistical analysis of the whole flora in regard to its vertical distribution is given by Mr. Ball in his lecture 'On the Origin of the Flora of the European Alps.'* This lecture might well have been reprinted *in extenso* to accompany the table, but we can hardly blame the Linnean Society for not doing so. Another very welcome addition would have been a map showing the districts, but this idea was, we think, unfortunately abandoned. Mr. Thiselton Dyer explains that 'those who are acquainted with an intricate mountainous country will readily understand that, though practically there may not be the smallest difficulty in recognising a particular district on the spot, questions of great intricacy may, and probably will, present themselves in attempting to delimit it on a map.'

So far as they have been put on record, Mr. Ball's views on the origin of the Alpine flora are to be found in the above-mentioned lecture, printed in the 'Proceedings' of the Royal Geographical Society. Taking the 2,010 species of Alpine plants enumerated, Mr. Ball points out that more than two-fifths of the whole number are to be found in the floras of all parts of temperate Europe, many extending to Siberia, and some to North America. These are plants of vigorous organisation, with a considerable power of adapting themselves to varied environment. They do not ascend high up the mountain slopes, and form no special element in the Alpine flora. Consequently, to obtain the true Alpine flora, these—792 in number—must be subtracted from the 2,010, as also must 61 stragglers from the Mediterranean area. This leaves 1,157, and Mr. Ball proceeds to consider them more closely. The result is to confirm him in his belief that the Alpine flora owed comparatively little to a migration from the Arctic flora. Here is his conclusion :—'Of the species included in the Alpine flora 17 per cent. are common to the Arctic flora, and 25 per cent. are common

* *Proceedings of the Royal Geographical Society, 1879.*

to the Altai range; while the Arctic flora has 40 per cent. common to the Alps and 50 per cent. common to the Altai, using this as a collective name for the ranges of Northern Asia.

'Now if, in deference to the great authorities I have named, I were to admit that every one of the Arctic species common to the Alps had originally reached the mountains of Central Europe by migration from the north, I ask how far that would avail towards an explanation of the origin of the Alpine flora? If we had accounted for 17 per cent. of the species, what should we have to say of the remaining 83 per cent., including at least four generic types peculiar to the Alps, and a very large number not found in the Arctic regions—of the genera present in the higher zone of the Alps only one-half being Arctic? Is it credible that in the short interval since the close of the glacial period, hundreds of very distinct species and several genera have been developed in the Alps, and—what is no less hard to conceive—that several of these non-Arctic species and genera should still more recently have been distributed at wide intervals throughout a discontinuous mountain chain some 1,500 miles in length, from the Pyrenees to the Eastern Carpathians? Nor would the difficulties cease there. You would have left unexplained the fact that many of these non-Arctic types which are present in the Alps are represented in the mountains of distant regions, not by the same, but by allied, species, which must have descended from a common ancestor; that one species of *Wulfenia*, for example, inhabits one small corner of the Alps, that another is found in Northern Syria, while a third allied species has its home in the Himalaya.'

In conclusion, it may be stated that Mr. Ball has left behind him in these tabulations a fine monument to his unbounded industry, and one that will be of enormous service to future workers in the same field.

Life and Letters of Fenton J. A. Hort. By A. F. Hort. 2 vols.
(Macmillan. 1896.)

With the end of the present year the Alpine Club will complete the fortieth of its existence. Thus the Club is older than probably almost half of its members; for though a considerable proportion of the tops on which our President looks down from his exalted seat on the platform are fairly powdered with white, there are, happily, a large number still well below the snow line. The time has, therefore, obviously arrived when the 'Alpine Journal' may devote a little of its space to the pious task of 'praising famous men and our fathers that begat us;' and it is from this point of view that we would draw our readers' attention to these memoirs of one who is very distinctly in that category. A few of our founders are still with us; long may they remain! but of those who responded to Mr. Kennedy's appeal in the autumn of 1857 the great majority have disappeared from the list of the Club—some by resignation, still more by death. Of all the number, perhaps, none, not even our first President, was more typical of the kind of persons

who in those days sought recreation in the Alps than the man whom a younger generation knew chiefly as a great theological scholar, the late Professor Hort. Mountaineering, in one form or another, has now become a fashionable pastime, and the popular Alpine resorts are largely replenished during the season from Bayswater and Kensington; but in those days if you met a man in the Alps it was ten to one that he was an University man, eight to one (say) that he was a Cambridge man, and about even betting that he was a fellow of his college. There was, too, a fair probability that he was also a more or less competent botanist or geologist. Hort combined all these qualifications, the last in a large measure. Though he ultimately made theology and New Testament criticism his special line several distinguished botanists seem to have expressed their regret at the perversity, as it appeared to them, which led him to abandon the systematic study of a science in which everything pointed to his attaining the highest eminence. He never, indeed, deserted it altogether. 'In 1861,' we are told, 'he stayed a fortnight at the top of the Stelvio Pass. A friend expressed surprise that he and his wife could linger at such a place. "Oh, but," he said, in perfect simplicity, "we have found fourteen new plants."' Three years later he spent three weeks with perfect contentment at Limone, on the Col di Tenda, and when that grew too hot a month on the Mont Cenis. At the latter spot an interesting meeting took place.

'On Monday evening,' says Hort, 'I saw the *conducteur* throw down to the people of the house a plaid and a black knapsack, and cry out that they belonged to a *monsieur et dame* (as I understood) who would be *bientôt ici*. Presently I saw a man in a grisly beard come up the steps with some flowers in his hand and a curious thing over his shoulders, which turned out to be an umbrella tied on to a pole, with what seemed to be a pick in a leather case. Clearly he was Alpine, probably English, and moreover he looked uncommonly like Ball! I got the landlady to go in with water and towel, and ask his name apologetically on behalf of a *monsieur* who thought he recognised him. In answer I heard, "Ball, Ball, Ball," three times very distinctly. Of course I waylaid him as he came out, and made him have his coffee brought to my room, where we chatted and looked over plants for some time.'

Ball was on his way to Santa Caterina, and Hort incidentally mentions that the second volume of the 'Alpine Guide,' then just published, contained little or no information on those regions except what he himself had been able to collect at Santa Maria three years before. Mr. Tuckett's expedition of that summer was really the first serious attempt ever made at a thorough investigation of the topography of the Ortler group.

'Next morning the two botanists walked down to Susa, by the side of the valley, or basin, of the Cenise opposite to that followed by the road, along the side of the Rocca Melone.' 'I doubt,' the writer adds, 'whether I have ever had such a haul of plants—twenty species entirely new to me, and seven of them belonging to seven new *genera* . . . and then there was the benefit of having Ball with me.'

Hort had not, as we know, always made botany his first interest in the Alps. His first visit to Switzerland and Tyrol was made in 1854, when he was twenty-six years old; though his glacier expeditions of that year did not go beyond such feats as a visit to the Jardin, and 'a long and difficult climb to the Stockhorn of the Zmutt Glacier,' and the crossing of the Löttschen Pass. But he had got well inoculated with the climbing fever, and when he went that way again two years later he was prepared to fly at higher game. In company with the late Bishop of Durham he made the ascent of the Jungfrau under somewhat curious circumstances. For fourteen years the mountain had been untouched; then it began again to attract attention, and the expedition of Hort and Lightfoot was the third within a week. The account given in Hort's letters is very characteristic of those days, before what may be called the jargon or 'shop' of mountaineering had sprung up, when Siegfried maps were not, when everything was a novelty, and even a walk up the Aletsch Glacier had much of the charm of exploration. Some readers may be amused with the few trenchant strokes in which a 'young Austrian,' whom the party met at the Faulberg, is touched off.

From the Oberland, in the lavish fashion of those days before 'centres,' they proceeded to the Mont Blanc district, taking the Altels on their way. It is interesting to read that Hort did a good deal of photographing, and still more interesting would it be to have a sight of the results, if they still exist. For more than a month Hort remained at St. Gervais, forming one of a persevering band who made repeated attempts to complete the ascent of Mont Blanc from that side, a route of which the feasibility as far as the Dôme du Gouté had been proved by Messrs. Hudson and Kennedy in the previous year. How the various attempts fared is known to all readers of Mr. Vaughan Hawkins's paper in the first volume of 'Peaks, Passes, and Glaciers,' a paper which is, perhaps, more thoroughly coloured with the sentiment, if we may so say, of bad weather than any other Alpine writing with which we are acquainted.

This seems to have been the last of Hort's high mountaineering. Not long after this his health gave way, largely from over-work; and from that time forward anything like high climbing was forbidden him. He was, indeed, for the remainder of his life in a position extremely tantalising to one who had, while his powers lasted, delighted as much as any man in the 'Alpine sport,' for he was at the same time enjoined by his medical advisers to spend a large part of every summer at some Alpine resort as high as could be found. In this way he made acquaintance not only with some places now frequented by crowds, but then the haunt of a few intimates—the Riffel, the Aeggischhorn, Mürren—but with some less known quarters. Nor do we ever find him complaining of this enforced inactivity. Fortunately for him climbing was not his only resource. His scientific attainments and interests became of the greatest possible service to him; and his example may serve to show the value to a true lover of the Alps of some study which he may take

with him. Of course the man who takes up climbing for a few years because it is the *mode*, who has a season or two of 'Rothhorn, Matterhorn, Weisshorn,' devotes one or two more to finding a new route up the Fünffinger-Spitze, and then deserts the mountains without a pang for golf or cycling, or whatever may be the latest fashion in amusements, has no need of any second string. But these are not the majority. Most men who made their first acquaintance with the mountains in boyhood or early youth feel like the 'ten-year soldier' musing on what lies 'east of Suez.'

Once you've heard the *Alps* a-calling
 You won't never 'eed naught else ;
 No ! you won't 'eed nothing else
 But them spicy *chalet* smells,
 And the sunshine and the *pine trees*,
 And the tinkling *cattle* bells.

To the mountains, able-bodied or not, they will go, and it will be well for them if, like Hort in the years when he was obliged to ride mules where he had stoutly walked, and wander about the foot of the peaks he had climbed, and others which he would have delighted to climb, they have other interests to fall back on, and other fields to explore, in which vigour of body is not indispensable.

The Flora of the Alps. By Alfred W. Bennett, M.A., B.Sc., F.L.S.
 2 vols. (London : J. C. Nimmo. 1896.)

These two volumes differ from the various handbooks hitherto provided for the wanderer in the mountainous regions of Europe. For whilst Gremli is restricted to the flora of Switzerland, and Dalla-Torre to the Alpine plants of Switzerland and the adjacent mountain regions, Mr. Bennett's work includes descriptions of all the species of flowering-plants indigenous to Switzerland, and of the Alpine species of France, Italy, and Austria, including the Pyrenees. The comprehensive nature of the book will, no doubt, be acceptable to many, though he who journeys year after year to Switzerland will probably be content to go on using his well-worn Gremli. The descriptive portion of the work is arranged on the system familiar to English botanists—*i.e.*, that of Bentham and Hooker—a welcome innovation in Alpine floras, which have been too long wedded to the irritating Linnæan system. The reader must not expect a full description of every species cited. Were this the case the book would be too cumbersome for portability. But the details given are, on the whole, adequate, and the amateur botanist will be able with this book in hand to identify as many of the plants he finds as he could with any other. The plates, 120 in number, and printed in colour, are a disappointment. They seem to us lacking in artistic qualities, are defective in drawing, and crude and garish in colouring. We much prefer the rough, unambitious, little lithographs which constitute Schröter's '*Taschenflora des Alpen-Wanderers*'; but this is only an opinion. Many will, without doubt, value the pictures in the present work for their laborious carefulness and attention to detail. The body of the work is pre-

ceded by an interesting introduction, in which the biological characters and geographical distribution of Alpine plants are touched upon. Though some allusion is made to Alpine botanic gardens, we see no mention of the very charming garden at Bourg St. Pierre on the St. Bernard, where may be seen a large number of Alpines, not Swiss only, but from all parts of the world. Botanically, this spot is no less attractive for its wild flowers than for its garden, whilst the scenery is as noble as any in the Swiss Alps. But the traveller hurries by on his way to the hospice! It only remains to be added that the book is beyond criticism in the matter of paper and printing, and that it is furnished with an adequate index and glossary of technical terms.

Guida delle Alpi Occidentali. Da G. Bobba e L. Vaccarone, Vol. ii. 'Alpi Graie e Pennine.' Parte Seconda. (Torino. 1896.) Pp. xxxix, 553. Price, 8 francs, bound.

This anxiously expected work forms the completion of the 'Guide to the Italian Slope of the Western Alps.' The first volume, by SS. E. A. Martelli and L. Vaccarone, was reviewed in this Journal* in May 1889, the second volume, part i. (by the same authors) in November † 1889.

As the scope of the work was fully explained in these reviews we need not here do more than say that its excellence is fully maintained in this volume. The amount of information given is immense, and the work will be invaluable to all climbers who visit the districts covered by the book.

The panoramas and plates, of which there are eleven, will be found most helpful. In particular No. ii., the mountains at the end of the Valnontey, from a photograph by S. C. Grosso, gives at one glance information which a few years ago it would have taken hours, not to say days, of hard labour to put together, whilst the nomenclature is not only correct but absolutely up to date. Nos. x. and xi., Monte Rosa from the S.E. (Alagna) and from the E. (Macugnaga), from photographs by S. V. Sella, are quite works of art. The book is divided into three parts, which can be detached for carrying in the pocket—a most useful arrangement. The type is good, and there is an excellent index. Such omissions as we have been able to discover are of so trifling a character as to be practically of no consequence.

We offer our warmest congratulations to S. Vaccarone and his two colleagues, S. Martelli and S. Bobba, on the successful completion of their arduous labour. They deserve the hearty thanks of all mountaineers who visit the Western Alps on their most beautiful side—the side of 'la bella Italia.' It is very pleasant to us to welcome so exhaustive a guide to Italian Alps by Italians, a guide which their fellow-countrymen will regard with great and legitimate pride.

* *A. J.* xiv. pp. 335–8.

† *Ibid.* pp. 525–7.

Swiss Alpine Club Jahrbuch. 1896. (Bern.)

This volume (xxxii.) appears with an abundance and richness of illustrations quite equal to any of its predecessors. Several of the illustrations are reproductions of water-colour drawings. These at first sight seem too vivid to be natural. The editor suggests that the effect will be improved if they are viewed from some distance. No doubt the effect is thereby softened. One of these, however, is exceptionally good, a view of the Presolana, from a drawing by our fellow member Mr. E. T. Compton. Of new ascents (or ascents by new routes) there is little that has not already appeared in the pages of the 'Alpine Journal,' and some of these date a long way back. MM. Wagnon and Beaumont, on September 20, 1895, ascended the Buet by a new route from Val Orsine to the ridge between the Buet and Mont Oreb. On September 30, 1895, M. Godefroy, from Motets, ascended a nameless peak (3,088 m. = 10,131 ft.) N.E. of Mont Tondu, which he proposes to call *Pointe des Lanchettes*. SS. Canzio, Vigna, and Mondini effected, on August 21, 1895, the ascent of Punta Fiorio (3,357 m. = 11,114 ft.) from the Alp de By, and returned by the Col de Berio (3,000 m. = 9,843 ft.). Signor Mondini, on August 23, effected a new descent from Mont Gélé by the S. face, and on August 27 alone effected a new pass (Colle di Livournea, 2,881 m. = 9,451 ft.) from Prarayé to Nus. They add a notice of the Val St. Barthélemy, N. of Nus, which they regard as a forgotten corner of the Alps. On October 27, 1894, SS. Leone and Sinigaglia ascended the Punta di Cian (3,121 m. = 10,240 ft.), in Val Tournanche, by the S. face. On August 5, 1895, MM. A. and E. Michelin and Pierre Puiseux ascended the Mittelgabelhorn (3,692 m. = 12,132 ft.) from the Trift Alp by the W. ridge. On August 17, 1895, SS. Massoni and de Pretto, with four guides, ascended the Nadelhorn (4,334 m. = 14,215 ft.) from the Dom hut. On July 22, 1893, Herr A. Bernoulli ascended the Klein Lohner from the E.; on July 17, 1894, the Birrenstock from the S., thus making this latter ascent earlier than that recorded in the 'Alpine Journal.*' A nameless peak (3,100 m. = 10,171 ft.) between the Hüfi Glacier and Val Rusein was ascended by Sir W. M. Conway on July 25, 1894, and christened *Piz Gurkha*; the same was ascended by Herr Hans Brunn on July 22, 1895, and christened *Heimstock*. The editor thinks that neither name is admissible. The period for exploring the Club district (Albula) has been extended to 1897. The second sheet of the map appears with this volume. Herr D. Stokar (Randen) continues his excursions with P. Mettier. On July 31, 1895, he ascended *Piz d'Aela* from the S.E., by a route so difficult that the guide said he would never go that way again. On August 9 he ascended *Piz Kesch* by the N.W. ridge. Where this abuts on the N. face the slopes are formidably steep, but the snow was good, and only once did the step which the guide made give way

* Vol. xvii. p. 600.

under Herr Stokar. However he was safely anchored with his axe. Herr Wilhelm Paulcke (Davos) contributes an account of two somewhat adventurous excursions. On August 15, 1893, from the Silvretta Club hut, he crossed the Gross Litzner alone from W. to E. From the saddle between the Gross Litzner and Gross Seehorn he traversed the S. face to the Vorgipfel, and returned to the hut. On August 11, 1895, along with a friend, Herr Branger, he reached the Aela hut at 8 p.m., disturbing much the Rev. W. A. B. Coolidge and his guide, young Christian Almer, who had retired to rest early. On August 12 they started at 5.10 a.m. for the Tinzenhorn by the N. face. They reached the Fuorcla da Cravaratschas at 7.50. They then had to attack the steep face. At 8.50 a difficult rock passage forced him to get on his friend's shoulders to gain a hold. A traverse brought them to the great gully which runs from summit to base of the mountain. On this side of the gully ascent was impossible. The gully was crossed with difficulty, and, after traversing a narrow band, he again mounted on Herr Branger's shoulders; but this time he failed to get up, and with extreme difficulty succeeded in alighting again on the same uncertain resting-place. An attempt a little further on was successful. They reached the upper snowfields; the snow was in good order, and the top was reached without further difficulty. Herr E. Imhof contributes another chapter on the lower summits of the district. In three days, August 16, 17, and 19, 1895, he ascended eight peaks, none, however, exceeding 3,000 m. (9,843 ft.). Only on one occasion did he meet with any difficulty in crossing a projecting ridge on the Älplihorn.

Herr A. v. Rydzewsky (Bern) describes the first ascent (in 1893) of the Ago di Sciora (3,201 m. = 10,508 ft.). This sharp rocky point lies to the N. of the Pizzo di Sciora, in the Albigna glen. He was accompanied by the well-known Courmayeur guide E. Rey, and by Christian Klucker. The Ago is separated from the Pizzo di Sciora by a rock-cleft, from which a steep couloir descends to the glacier. Failing to ascend by this they crossed the face of the mountain N. and N.W. to the col on the N. side. This was reached at 10 a.m., in 7½ hrs. from the shepherd's hut in the Albigna glen. The 140 m. (460 ft.) which separated them from the summit were passed not without difficulty, and the top was reached at 11.15. The top was left at 12 noon, and they returned by the same route to the hut at 6 p.m.

Out of the special district MM. Jeanneret-Perret, Julien Gallet, and Rieckel, with two guides and three porters from Ried (all of them but one named Kalbermatten), explored part of the Bietschhorn district. On July 6, 1895, they made a new ascent of the Breitlauhorn (3,668 m. = 12,058 ft.) from the S.; on July 7, a new passage (Baltschieder Lücke) from the Inner Baltschieder Firn to the Gredetsch Glacier, and thence over the Gredetsch Joch to the Beich Firn, the Aletsch Club hut, and the Belalp. Then, on July 9, from a bivouac at Jägisand, 3 hrs. from Raron, they ascended the Krütighorn (S. of Bietschhorn).

Herr Hans Brun (Uto), on September 19, 1895, ascended the Rosenhorn (3,691 m. = 12,110 ft.) by the N.E. ridge. Starting from the Dossen hut at 6.25, after a difficult passage of the bergschrund the top was reached at 2.10 p.m. In the descent they were benighted and had to bivouac on a rock ledge, a rather unpleasant experience so late in the year. Herr Karl Knecht (Bern), after the opening of the Gauli Club hut on July 8, 1895, along with two friends, the next day made the first ascent of the E. peak of the Hinter Trifhorn and descended to the Pavillon Dolfuss, the expedition occupying 16 hrs. Dr. A. Zublin (Uto) describes a number of ascents about All' Acqua, the chief of which were the ascents of Pizzo Gallina and Piz Pesciora. He endeavours to settle the exact position of the Marchhorn, and complains that the Siegfried map in this part is very deficient. Dr. Jörger (Piz Sol) describes a number of tours in the Valser Thal (Vorder Rhein), but there is nothing new. In the ascent of Piz Jut from the Lampertsch Alp they were much annoyed by the persistent attention of a flock of sheep, from which they were only delivered by the excellent barking of the guide. Herr Ludwig Purtscheller (S. Gallen), with his faithful companion Dr. Blodig, ascended nearly all the summits of the Bergamasque Alps. The chief tour was the traverse, on July 22, 1895, of three of the highest, Pizzo del Diavolo (2,915 m. = 9,568 ft.), Pizzo Redorta (3,037 m. = 9,964 ft.), and Pizzo di Scais (3,040 m. = 9,974 ft.), in which they met and overcame various difficulties. Herr F. W. Sprecher (Uto) describes his wanderings in the Taminathal. He points out that the name Calfeisen- or Calfeusen- (not Calfeuser-) Thal applies only to the part above Vättis, and recounts several curious legends current in the valley. Dr. August Walker (Weissenstein) spent twelve days in the Dolomites in June, 1895. He made no new ascents, but several first ascents of the season. On the Langkofel (June 27) the snow was so good that Luigi Bernard said he had never known the mountain so easy.

Herr G. v. der Gabelenz (Bern), in a tour in the Roman Apennines, on June 15, 1893, ascended the Corno Grande (2,931 m. = 9,616 ft.) from the Rifugio (2,200 m. = 7,218 ft.) in 2 hrs. 40 min., not by the usual route, but by a steep couloir in the N.W. face.

Dr. F. A. Forel (Morges) and Dr. L. de Pasquier (Neuchâtel) contribute a report (No. 16) on the glacier movements. They observe that though the beginning of the advance varies in the different glaciers they reach their maximum nearly at the same time, and they all begin to retreat at nearly the same time. The two periods of retreat in this century began in 1855 and 1893.

Herr A. Bosshard (Winterthur) has a short article on the Zürich Oberland in illustration of the panorama attached to this volume. This is taken from the Hörnli (1,200 m. = 3,937 ft.), a summit E. of the Bauma station on the Rütli-Winterthur railway.

Dr. R. Zeller (Bern) describes the different minerals found in the Binnenthal. There are two memorial notices, one by Dr. Carl Schmidt (Bern) on Herr Ludwig Rutimeyer, who died November 25, 1895. Though no Alpinist in the modern sense he was one of the

most active explorers of the Swiss Alps, and one of the most zealous founders of the S.A.C. The other is by Herr L. Held (Bern) on the cartographer Rudolf Leuzinger, who died on January 11, 1896. He was a pupil of Ziegler and afterwards a fellow worker. He had a wonderful skill in representing the natural features of hilly ground. He executed wholly or in part no less than 118 sheets of the Siegfried Atlas and about 200 other maps.

Pfarrer Gottfried Strasser (Oberland) gives an account of the progress of guides' insurance between 1881 and 1895. In the beginning the conditions imposed by the Zürich office were so stringent that many guides refused to insure. Formerly married guides were favoured above the unmarried; no compensation was allowed for cases of frostbite, and no compensation given if a cure was effected in thirty days. Now these and other grievances have been remedied, and the guides, especially those of the Bernese Oberland, come forward more readily. The premiums paid by the guides (the S.A.C. pays the rest) are very moderate—2 francs per annum for 1,000 francs, and 20 francs for 4,000 francs. The office in the above period has paid 82,000 francs (1,800*l.*) in compensation of injury or death by accident.

There is an interesting reprint describing a tour made by Herr Stettler and his party from the Urbachthal over the Gauli Pass to the Lauteraar Glacier in 1795. On August 10, starting at 3 A.M., after a difficult passage of the bergschrund they reached the ridge at 11, and the Grimsel at 8 P.M. This was supplied through the kindness of the Rev. W. A. B. Coolidge. This gentleman describes his excursions on the E. end of the Brigelser Hörner, which resulted in the discovery that Piz Tumbif has *two* summits, and not *one*, as hitherto believed.

Herr O. Stolberg describes a visit to the top of the Säntis on December 31, 1895. On the descent the next day they met two young porters carrying supplies to the house. These two perished in an avalanche on February 3 following, and four weeks later were found under nearly 9 yards of avalanche snow.

At the end of 1895 the Club numbered 4,869 members. The Club huts number 47, of which a full account is given in an annexed pamphlet. In the folding case are panoramas from Piz Ot, the Rosenhorn, and the Hörnli (Zürich), and the second sheet of the map of the special district (Oberengadin).

Zeitschrift of the German and Austrian Alpine Club (1896. Graz).

This volume (xxvii.) is full of interesting matter and richly illustrated. Of the fifty-six engravings in the book no less than twenty-six are from drawings by Mr. E. T. Compton. Several of the articles are monographs of the district in which the expeditions are made. The history of each mountain is told, and the first ascents by the various new routes mentioned. Herr E. Richter describes a journey through Norway, whose mountain scenery he asserts to be the wildest in all Europe. The difficulties are of a peculiar nature even in the plain; *e.g.* because of a broken bridge

the party went five hours along the bank without finding any means of crossing. The glaciers, again, are sometimes so destitute of marked features that a guide missed the way, and converted a walk of two hours into one of seven. He praises the inns and the food, but finds the roads often indifferent.

Herr Jean Habel made excursions in 1894 and 1895 amongst the mountains near Aconçagua. This range is easily reached by railway to Mendoza, and thence by a mountain (partly cog-wheel) railway. The last station is Punta de las Vacas, 2,460 m. (8,071 ft.) above the sea. Thence the Uspallata Passes (3,810 m. and 3,970 m. = 12,500 ft. and 13,025 ft.) are reached by post (4 hrs.) and on horseback (1 hr.). Leaving Mendoza at 6 A.M., Valparaiso is reached at 10 P.M. The journey across the continent from sea to sea took 72 hrs. By this time a driving-road is completed over the E. pass. Herr Hubel's chief explorations were in the valleys of Bodegas, Vacas, and Horcones. In the latter a camp was formed at 3,500 m. (11,488 ft.), from which on one occasion he rode to 4,125 m. (13,540 ft.), and on another reached a height of 5,400 m. (17,717 ft.) on the Cuerno de los Horcones (Gabelhorn). He describes the sensation arising from the rarefied air as that not of weariness, but of some obstacle which at each step had to be pushed out of the way. Professor Frid. Ratzel writes on the Alps as regarded historically, and Dr. Joseph Pommer on the songs current in various Alpine districts. The latter paper contains many amusing anecdotes, but both the articles are long enough to require a separate notice. Herr Karl Wolf describes the peasant customs in the *Burggrafen-Amt* (Meran). This seems to be a *résumé* of his work on this subject published some years ago. Herr Gustav Euringer describes a number of expeditions in the Mont Blanc district in the years 1889, 1890, and 1893, including most of the difficult peaks. On August 30, 1890, in the ascent of the Aiguille du Géant with the guides Payot and Gaspoz, he was much hindered by *Bergkrankheit*. On the same day Herr Ludwig Purtscheller made the ascent alone. This latter gentleman, with Dr. Blodig, made numerous ascents in the Maurienne and Tarentaise districts. The complete passage from the central to the western peak of the Levanna on August 9 is new. On several occasions three peaks were ascended in the same day. After traversing the Tsanteleina (3,606 m. = 11,833 ft.), and the Pointe de la Traversière (3,841 m. = 10,966 ft.) they determined to ascend the Grande Sassièrè (3,756 m. = 11,667 ft.). The last part of the passage of the 'Grat' presented great difficulties, and resembled very nearly that of Dr. Guido Lammer on the Gross Venediger ('Zeitschrift,' 1893). On August 17 they ascended the Dôme de la Sache and Mont Pourri by the route followed by the Rev. W. A. B. Coolidge in 1891. The ascent lasted from 3.15 to 10.35 A.M. Herr Joseph Enzensperger describes the group of the Hofats in Algau. This mountain lies S.E. of Oberstdorf, and has long been notorious to mountaineers, from the steepness of its slopes, particularly the grass slopes. For these, it is said, quite a peculiar style of climbing is required. There is often more danger than difficulty,

but a steady head is absolutely necessary. The illustration of the descent into the 'Rothen Loch' shows this plainly. There are four principal summits, which, however, only differ in height by a couple of yards. The writer describes the different routes by which each of these is ascended, and gives the names of the first tourists who reached them. The east peak is reached by no less than five different routes. Herr Gustav Becker describes the mountains in the ridge which divides the Gurgl Thal from the Pfelders Thal, many of which he ascended. The most exciting is the passage from the southern to the northern peak of the Hochwilde (8,480 m. = 11,417 ft.), against which for some time the guides Jos. Klotz and Jos. Scheiber protested. The chief difficulty in this was a rock-climb like the 'Mauvais Pas' on the southern Aiguille d'Arves, which Herr Paulcke successfully overcame alone and then helped the others up. This traverse is new. Herr Oscar Schuster describes the Langkofel group. The Langkofel itself, though not difficult when the snow is in a very good condition, is dangerous from falling stones, particularly in the Upper Rinne. A rock route which avoids this was found on August 18, 1892. The Grödner Thal guides usually follow the old way up and the new one down. On the Grohmann Spitze a party, of whom Mr. Norman Neruda was one, had much difficulty in descending the Johanneskamin when coated with ice, which the boldest of them regarded with a shudder.

The editor, Herr Heinrich Hess, gives an account of the Steiner (or Sulzbacher) Alps. These lie on the borders of Styria and Carinthia. The two highest summits are the Grintovec (8,395 ft.) and the Ojstrica (7,710 ft.). The group is accessible from Cilli by railway to S. Peter and Schönstein, or from Laibach to Stein. The mountains, though not high, are often rugged and of bizarre forms, and the paths are sometimes extremely difficult, even though marked, and require a steady head (witness the illustration of the descent into the Ravni). It is a great advantage to the tourist that the region is not flooded by the tourist stream, and is therefore comparatively cheap.

Den Norske Turistforenings Aarvog for 1896.

The well-deserved reputation which was gained many years ago by the Norsk Tourist Club by the publication of their Year Book is well sustained in their last issue. The papers are worthy of the book, and the whole forms a pleasing contrast to most of the books and papers about Norway which spring up in the early summer in England with as great regularity as do the weeds in a garden. Though the illustrations are good there have been better some other years.

There are some excellent sporting mountaineering papers, notably one by Herr K. Bing on his ascent of the Brixdals-bræ, a very bold and hazardous adventure, fortunately brought to a successful issue, though for the space of nine hours Bing and his companion were battling with the séracs.

English readers will naturally turn at once to the admirable

paper by Mr. C. W. Patchell, who has condensed into ten pages a capital description of many notable adventures. This gentleman has, as the result of many successful campaigns, gained an intimate knowledge of the wild Norsk *fjelde*, with which few men can vie. There is another English paper which treats of the Gjeunalund district, also one in Norsk on the same subject.

The reader is introduced to much comparatively new ground, such as the weird recesses of Lyngen fjord, the mountain-tops of Nordmör, and the wild *terrain* W. of Snehatten. Herr Carl Hall has, as usual, enriched the book with the addition of several short papers. Very many persons will be delighted to see that at last the Tourist Club have made the path from the valley of Olden towards the Olden skar, a most necessary connecting link for pedestrians.

Amongst the list of so-called first ascents made in 1895 is that of Kjölaastind, or Gluggentind. It is pretty certain that a 'first ascent' of this lovely peak has been made on three different occasions, viz. in 1876 by the present writer, who would not, however, take his oath upon it, as the mountain was enveloped in clouds when he was on it; next by two Norsk students in 1880, and lastly in 1895. Cannot some man make a fourth first ascent? This mountain is one of the most beautiful in Norway, and is the scene of many a wild legend.

W. C. S.

PROCEEDINGS OF THE ALPINE CLUB.

A GENERAL MEETING of the Club was held in the Hall on Tuesday evening, February 2, at 8.30. Mr. H. Pasteur was in the chair in the unavoidable absence of the President and Vice-Presidents.

The following candidates were balloted for and elected members of the Club: Messrs. K. F. Kingdon, H. V. Reade, E. G. Tatham.

The CHAIRMAN stated that Dr. Albert Heim, of Zürich, had accepted the honorary membership which had been offered to him by the officers and committee of the Club.

The accounts for 1896 were then presented.

The CHAIRMAN considered that the Club might congratulate itself on the accounts being so satisfactory, especially with regard to the cost of the 'Alpine Journal.'

Mr. J. H. Wicks, the Treasurer for 1896, said that he had stated twelve months ago that the total deficiency of 558*l.* 2*s.* 10*d.* would probably be paid off in the course of three years, and it was a great satisfaction to find that in the past year it had been reduced to 285*l.* 15*s.* 10*d.* For the present year, 1897, it would be necessary to calculate on a smaller income from entrance fees to the extent of some 50*l.* to 60*l.*, as the number of new members was likely to be below the average, probably on account of the very unsatisfactory weather in the Alps last season, which prevented the usual number of candidates from qualifying. He explained that, owing to the fact that almost the whole of the Club's income

is paid in the first few days of January, whereas the expenditure is spread over the whole year, and many of the accounts are not presented till after the end of the year, he had been able to repay the loan of 350*l.* which the Club had to borrow. The only item in the expenditure account which he thought called for special mention was that of the 'Alpine Journal,' the total cost of which was only 42*l.*, as against 112*l.* in the preceding year. The reduction in the cost of printing and publishing was almost entirely due to two causes; of these the principal one was that the new paper, which it had been decided to use after the completion of vol. xvii., in order to obtain better illustrations in the text, cost much less than the old description of paper. The other cause was that there were about ten per cent. fewer pages. The illustrations cost less, and though fewer in number were vastly improved in quality, and he thought that the Editor was deserving of great credit for this much-desired improvement. He would like to see the sales of current numbers increase instead of remaining stationary, as they had done. The sale of back numbers, however, and also the number of advertisements showed a satisfactory improvement, and so reduced the total net cost of the 'Journal.'

The accounts were then unanimously passed.

Mr. E. J. GARWOOD then read a paper entitled 'Across Spitzbergen with Sir Martin Conway,' which was illustrated by numerous lantern slides.

SIR MARTIN CONWAY said that the part of Spitzbergen in which he and his companions had spent most of their time was not a region of fine mountains. In Spitzbergen, however, there were many really fine, though of course small, mountains. They are situated along the north part of the west coast; they are extremely precipitous and needle-pointed, and it was from them that Barendsz named the island. He recommended them to the consideration of the rock-climbing members of the Club. They were easy of access from the sea, and involved no bog-wading to get at. A party with an open whale boat for base could easily make themselves comfortable at the foot of any of these peaks, and would find no discomfort in moving from one to another. July was the best month for weather, sunshine prevailing during about half the month, or even more. Prince Charles's Foreland also consisted of a fine range of unclimbed peaks. The only mountaineering ascents of any importance made by members of his party were Garwood's ascent of Mount Starashchin and Garwood and Trevor-Battye's ascent of Mount Hedgehog, or Horn-Sunds-Tind. The latter was a very fine mountain to look at, tower-like in form as seen from a distance, and double the height of the hills about. Standing as it did near the South Cape, it was seen in fine weather by every ship approaching Spitzbergen, and so had gained a considerable reputation. The glaciers of Spitzbergen could not fail to interest any intelligent mountaineer. They were very different from Swiss glaciers, being for the most part of gentle slope and great width. The inland glaciers usually bulged over at the snout in a very remarkable

manner. The whole inland ice sheet was at present unexplored and presented many problems of importance for solution.

Dr. GREGORY also referred to his experiences in Spitzbergen.

The CHAIRMAN thanked Mr. Garwood for his interesting account of a little-known country, but he expressed a doubt whether other members of the Club would feel much tempted to share the bog-wading experiences of the party. The glaciers, being higher at the sides than in the middle, had a strange appearance to an eye familiar only with the glaciers of the Alps. The explorers had done good work in mapping the interior of the country.

A hearty vote of thanks to Mr. Garwood for his paper was unanimously passed.

A number of sketches by Mr. H. E. Conway, and some by Mr. Trevor-Battye, illustrating the paper, and two maps surveyed and drawn by Sir Martin Conway, were shown at the meeting.

A GENERAL MEETING of the Club was held in the Hall on Tuesday evening, March 2, at 8.30, Dr. G. H. Savage in the chair.

Mr. F. A. Satow was balloted for and elected a member of the Club.

The CHAIRMAN mentioned that the two water-colours by Mr. McCormick, 'The Ice-fall of the Tiu-Tiun Glacier' and 'Twilight, Soldash,' which he had presented to the Club, had been accidentally omitted from the list of gifts to the Club published in the last number of the 'Alpine Journal.'

The maps and photographs in the possession of the Club had been re-arranged and re-catalogued by Mr. J. T. Wills, and it was proposed to purchase additional maps to bring the Club's collection up to date.

The collection of photographs was very incomplete in some districts, and it was intended to publish in the 'Journal' a list of deficiencies, in the hope that members who had taken photographs in these districts would present copies of them to the Club.

The Club was also making a collection of lantern slides, but so far Mr. P. A. L. Pryor and Signor Sella had been the only contributors.

Sir MARTIN CONWAY exhibited two paintings in oil, representing the 'Grands Mulets' and 'A Crevice in the Glacier de Tacconay.' He said they were painted by A. V. C. Fielding (b. 1787, d. 1855), a prolific water-colour artist, who occasionally painted in oil. As he retired and gave up painting for many years before his death it is probable that the pictures in question were painted before 1851, the year in which Albert Smith made his ascent of Mont Blanc. Nevertheless there is an obvious connection between these pictures and those of the same subjects in Albert Smith's diorama. It is probable, therefore, that the painter of the diorama used these pictures, amongst other material, in designing his work. Fielding does not appear to have made an ascent of Mont Blanc; he probably, therefore, painted in this case from sketches supplied to him. Sir MARTIN CONWAY said he would be glad if any member

would give him information about the pictures, which were on view in the Club rooms.

Mr. CHARLES SLATER read a paper on 'The Altels Avalanche of 1895,' which was illustrated by lantern slides.

The CHAIRMAN thought there were many points worth noticing. Similar falls had taken place in past ages, both here and elsewhere in the Alps, though their only record was in folklore. A good instance was that of the myth of the Blumlisalp, which was once a very fertile alp, where it was said the cows were milked three times a day, and every pail of milk was a pail and a half, so excellent was the pasturage. But once a father visited his son and daughter there and was not made a welcome guest, and the curses which he uttered on leaving brought down an avalanche which destroyed the valley. Another point was the effect of wind. He believed that in battle it was not uncommon for soldiers to be stunned by the wind caused by a cannon ball passing near them; so in the case of an avalanche it was important to recognise the enormous amount of damage done by the wind current it caused.

Mr. C. T. DENT thought it was a good thing to have had a scientific paper. The interest that the Club professed to take in science was too rarely shown. Mr. Slater had given them a lucid and valuable paper on a very remarkable physical phenomenon. It was curious to note that the fallen mass of ice had up to the present altered very little, and the ice was so covered with soil and débris that it was unlikely to alter for a considerable time. When the outer zone of fine ice dust had melted the true proportions of the fall could first be judged. The mark on the Uschinengrat due to the melting of the ice was probably the same in size now as when first observed. The most curious result was the wind effect. It might have been expected that the projection of the mass through the air would have created a vacuum, and all the trees would have fallen towards the avalanche; but the trees had, on the contrary, fallen away. It was evident that the wind was generated by the compression of the air as the mass fell over the Tatelen edge, and that the resulting rebound of the air had led to the destruction and blown down the trees. He disagreed with Dr. Savage as to the possibility of wind percussion by cannon balls. In the case of the avalanche it was a (comparatively) narrow current of air which blew down the trees. As the mass of ice fell vertically it created an up draught, carrying ice dust, and a shower fell some miles off from a clear sky.

Dr. MARCET mentioned that Professor Colladon, of Geneva, having observed the upward movement of the water particles on the upper surface of the Pissevache waterfall, accounted for the phenomenon by an upward draught, due to an after effect of the compression of the air in a downward direction. This observation led Professor Colladon to propose a theory for the formation of hail which was adopted by many meteorologists. According to this distinguished physicist 'hail' is produced by an upward draught, due to the compression of air of a heavy shower; this

current of air holds the frozen particles in suspension. They are now attracted and repelled by electric power, becoming larger and heavier until they fall to the ground. The power of the wind was shown in the Altels avalanche by its displacing great rocks up the opposite side of the valley.

Sir MARTIN CONWAY said he had studied the contemporary accounts of the avalanche that fell at Elm about twenty-five years ago. There were certain points of similarity between that and the one on the Altels. It made no difference in the case of any very large avalanche what it consisted of, for with 2,000,000 tons of anything falling in a close mass, the friction inside the mass becomes insignificant compared with the momentum, and the whole falls as a liquid would. The rocks referred to by Dr. Marcet had been carried by the avalanche, and left behind by it; they were not carried by the wind. With regard to the timber of the chalets lying on the top of the avalanche, at Elm a wind preceded the rock avalanche by a few yards, and this lifted the chalets into the air, while the avalanche flowed on underneath, and the chalet ruins fell down on the top of the avalanche when it came to rest. Little side wind was recorded at Elm; the avalanche cut chalets in half, and the wind had practically no lateral effect.

Mr. GARDINER said that he had noticed in Hinchcliff's 'Summer Months' that when he ascended the Altels in 1856 he remarked to Melchior Anderegg that the glacier looked dangerous. Anderegg replied that it fell only once in a hundred years, and that it fell last sixty years ago. That was in '56, which makes it very nearly a hundred years from the last fall to that of 1895. He did not know if there was any record of a fall in an earlier century.

Mr. FRESHFIELD thought it was scarcely possible to calculate from so bad a season as the last the time it would probably take for the avalanche to melt. In all accounts of similar catastrophes the effect of the wind accompanying the fall was described as very considerable. Mr. J. A. Symonds, in his 'Our Life in the Swiss Highlands,' told several stories of the 'Lawinen-Dunst,' for the accuracy of which he personally vouched. He described houses being carried bodily for some distance through the air, and an old woman on her way to church being blown off the road into the top of a neighbouring pine which grew on the slope below.

Dr. BOWLES remarked that in the case of a gunpowder explosion neighbouring windows fell outwards. This was owing to a vacuum caused by the up current, and the consequent pressure exerted by the normal atmosphere on the inside of the windows.

Mr. A. J. BUTLER did not think it likely the ice would melt so soon as Dr. Heim had stated in his book. In 1874 in the Oetzthal he found blocks of ice left by the glacier during its last previous advance, which was at least twenty years before. A lump of hard ice covered with a little dirt was well protected and melts very slowly.

A hearty vote of thanks was accorded to Mr. Slater for his paper.

Mr. PUCKLE asked the Hon. Secretary a question about the subscription rate, but the CHAIRMAN pointed out that such a matter could not be brought before the Club without proper notice being given.

The proceedings then terminated.

A GENERAL MEETING of the Club was held in the Hall on Tuesday evening, April 6, at 8.30, Mr. Charles Pilkington, *President*, in the chair.

Mr. SYDNEY SPENCER read a paper entitled 'The Dom in January,' which was accompanied by lantern slides.

Mr. DENT said he could not speak of the difficulties of climbing the Dom or any other of the higher peaks in winter, as he had confined himself to the lower mountain regions in winter; with these he was fairly familiar. Certainly the beauties which lay in the sub-Alpine districts, which even in summer are far too much neglected, were well worth seeing, especially in regard to colour, which was very wonderful and could be looked at without smoked glasses. In regard to winter climbing he thought that climbers handicapped themselves with regard to their feet. The difficulties were low down, directly after leaving the highest chalets, and on the lower parts of the glaciers; and it was a mistake to go there shod in winter as in summer. Till some satisfactory foot gear was invented the difficulties of winter mountaineering would be exceedingly great. Last year there had been an extraordinary snowfall, which would have rendered any other place as well as Zermatt unsuitable as a winter resort. The depth had, he thought, been understated by Mr. Spencer, for in places it reached 45 ft. Saas Grund had been nearly carried away by an avalanche a fortnight after he left. That was the kind of thing which gave variety to winter travel in the Alps. He congratulated Mr. Spencer much on his photographs. He had himself some experience of the difficulty of interesting guides in photography even in summer, and of how winter increased the difficulties; and he considered Mr. Spencer's results were very admirable.

Mr. FRESHFIELD considered the question of foot covering a most important one in regard to winter climbing. He thought something might be learned from studying the Arctic experiences of Nansen and of others. Foot covering was a matter of great importance also with regard to the successful climbing of the highest peaks, which depended greatly on the prevention of frostbite; and winter climbing would probably afford useful experience for very high climbs. He had not climbed the high peaks in winter, but he knew how attractive the sub-Alpine region was at that season. He had once spent ten days in Switzerland in winter with Mr. Stephen, and three scenes were still clearly before him. One was in the valley of Lauterbrunnen on a thawing day, when the waterfalls, which had taken the form of icicles, began to melt and to thunder down like cannon. Another was the view from the top of the Faulhorn; the whole valley of the plain of Switzerland was covered with a grey mist, except the

lakes, which shone out as blue patches, like an inverted sky. The third scene was on the Lake of Brienz, to which sea gulls from the North Sea flock in winter. The wind was driving the snow from the mountain-tops, and a halo had formed round each peak, and against this background the gulls crossed to and fro.

Mr. MUMM wished to know whether what he had observed in winter was common in summer. He was standing well in the shade, and the sun was shining on a slope on his left, and the reflected light from it was strong enough to throw his shadow on the snow on his right, a secondary shadow in the shade.

Mr. WILLINK said he had seen the same appearance in summer, though only slightly.

Mr. DENT had often seen it in winter.

The PRESIDENT thought, with reference to foot covering, that the difficulty of *ski* was the weight for carrying, though they would save much trouble if properly used. In the Tyrol round snow shoes were used, which were easy to carry. As to keeping the feet warm, well greasing the boots with fat was a great help. Mr. Spencer seemed to have met with an unusual amount of ice. The first time the Schreckhorn was climbed in winter a shovel was carried to remove the snow. He was sure the Club would thank Mr. Spencer for his interesting paper and very excellent photographs.

This was unanimously agreed to.

THE RETAIL SALE OF THE 'ALPINE JOURNAL.'

AN arrangement has been made with Messrs. Longmans, Green, and Co. whereby Mr. Stanford, of Cockspur Street, Charing Cross, will keep a stock of the numbers of the 'Alpine Journal' for the current year, and will sell these both to members and the general public at the price marked on the cover.

It is hoped and expected that, since Mr. Stanford's is undoubtedly the most popular centre in town for obtaining books of travel and maps, this arrangement will be found a convenience both by members and the public, and lead to an increase in the sale of the 'Journal.'

A new plan will be adopted in the packing of this and future numbers of the 'Journal' for delivery by post—namely, the insertion of a piece of millboard inside the wrapper. It has been thought advisable to adopt this plan, notwithstanding the increased cost of postage, owing to the fact, which has been recently brought to the notice of the publishers, that the photogravures and plates in the 'Journal' are often considerably damaged by being bent and cracked when the postman forces the package into the letter box.

It seems a pity that the photogravures, which are expensive to produce, should not be efficiently protected. If, after this new method of packing has been adopted, damage still occurs, the Honorary Secretary would be glad if members noticing it would kindly communicate with him.

THE
ALPINE JOURNAL.

AUGUST 1897.

(No. 137.)

THE ALTELS' ICE AVALANCHE.

BY CHARLES SLATER.

(Read before the Alpine Club, March 2, 1897.)

THE summer of 1895, owing probably to the small amount of snow-fall of the winter and the prolonged hot weather of both this and the preceding year, was remarkable for the very large number of rock avalanches which occurred in the Alps. Not a few accidents, some fatal, resulted from falling stones. These various rock-falls sink, however, into insignificance when compared to the gigantic avalanche which overwhelmed one of the fertile pasturages which border the well-known Gemmi route; an avalanche remarkable not only for its magnitude, but still more for its character, consisting as it did of almost pure ice, and reaching, as such an avalanche so rarely does, to cultivated or pasture land. It will be remembered that the path which ascends by steep zigzags at the end of the Kanderthal until a height of some 6,200 ft. is reached, then runs along the edge of the Schwarenbach gorge, giving a magnificent view of the wild Gasterthal, and debouches suddenly at Stierenbergli on to a comparatively wide, flat and fertile valley. This is the first and lowest of a series of basins occupying the bottom of a steadily rising, trough-like valley, which extends from Stierenbergli to the summit of the pass overlooking Leukerbad. In this first basin were situated the cow chalets of Spitalmatten, and the alp or pasturage is known by that name. The alp, though situated in the Canton of Berne, belongs to the commune of Leuk in the Rhone Valley, and on account of its comparative cheapness is chiefly used by the poorer inhabitants of that commune. This was the scene of the disaster. The valley, through which runs the Schwarenbach stream, draining the

be seen on the sketch-map, is, or was, glacier-crowned from a height of about 3,000 m. to the summit, 3,636 m. (*i.e.* from about 9,800 ft. to 11,900 ft.). This glacier, hanging imminent over the Gemmi route, has been one of the striking features of the scenery. The rock stratification—it is a limestone district—has the same general direction as the hill slope, so that the glacier lies on a smooth limestone bed sloping from the summit of the Altels to the eastern edge of the valley. The general slope is only broken by a plateau, known as the Tatelen, a few hundred metres above the valley, and from this the rocks drop quickly to the Schwarenbach.

During August two crevasses are said to have started from each side of the glacier, and, advancing gradually, to have met and cut off by a huge semicircular crack the lower part of the Altels glacier. This appearance may have been due to the small amount of snow of the winter and the consequent clearing of the glacier. The ordinary crevasses, especially the Bergschrund, which in this case lies almost parallel to the edge of the fracture, would thus be rendered unusually visible.

On the evening of September 10, the Vice-President of the commune of Leuk arrived at the Spitalmatten chalets to regulate the summer accounts for the pasturage. For some days preparations had been made for leaving the chalets, and fortunately some of the calves and other animals had been driven down to the valley by the women. On the following day the rest of the cattle were to be driven down to their homes, the dairy product distributed, and the chalets closed until the succeeding summer. For some days the temperature had been high and the Föhn wind blowing, while the summit of the Altels was cloud-enwrapped. On the morning of the 11th, about 5 A.M., the scanty inhabitants of the district and the dwellers in the Schwarenbach Inn were startled by a roar as of an earthquake, accompanied by a violent blast of wind. The servant of the inn, frightened by the noise, rushed out and saw, in the dim light of breaking day, what appeared to be a white mist streaming down the Altels slope. The huge mass of ice forming the lower end of the glacier had broken away, rushed down the mountain side, leapt from the Tatelen plateau into the valley, and, like an immense wave, had swept over the alp, up the Uschinen Grat as if up a 1,500 ft. sea-wall, and even sent its ice foam over this into the distant Uschinen Thal. Notwithstanding the noise which must have accompanied this immense fall, it does not seem that anyone realised what had happened, but

thought, some that an earthquake had occurred, others that a little larger avalanche than usual had fallen.

The first to report the disaster were four woodmen who had been employed in the Arvenwald, and who usually slept at the Spitalmatten chalets. On this night, however, they had been at the Schwarenbach, and thus escaped the fate which otherwise would have befallen them; an escape due, alas! not to any excess of virtue, but to the desire, as they put it, to have 'a good drink once in a way.' The news was sent on to the summit of the Gemmi, and thus reached the telegraph, while a messenger struggled over the avalanche to Kandersteg. From both places parties were organised for the work of rescue and repair.

One of the most striking features about this great disaster is the entire absence of eye-witnesses, with the solitary exception of the Schwarenbach servant, and even observations are lacking until several hours after the event. The avalanche occurred just as dawn began to break; a shoulder of hill cuts off the view from the nearest inhabitants at the Schwarenbach Inn, and all who were engaged in cattle-tending on the alp itself were killed.

A traveller walking up the Kanderthal from Frutigen, about 5 A.M., had, indeed, a distant view of the accident. He saw in the Gemmi direction a fearful whirlwind with dust and snow-clouds, and experienced later a cold rain falling from a clear sky, the rain being probably due to the melting of the ice-cloud. He concluded that an earthquake had occurred.

The scene presented on the morning of the 11th to one rounding the shoulder close to the Schwarenbach Inn must have been most startling. Winter had apparently come in the midst of summer. The Spitalmatten basin and the Uschinen Grat to its crest were whitened as though by snow, while numerous masses of still white ice lay scattered over the area and rested far up on the steep sides of the Grat. Mist and cloud hung over the peak of the Altels, so that the origin of the disaster was shrouded in gloom and mystery. Several days elapsed before a clear view of the Altels glacier was obtained, and there was considerable anxiety lest a further fall should occur.

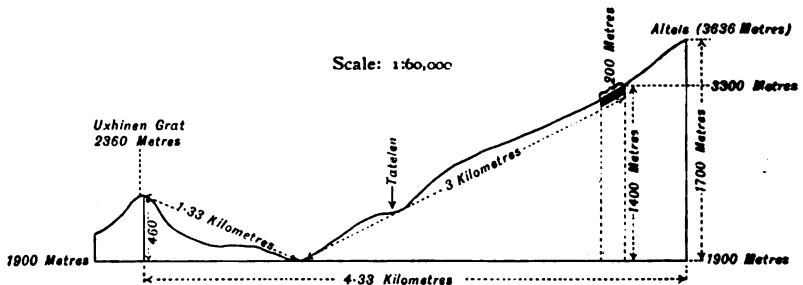
The rescue parties soon recognised that their duties would consist of burial and salvage. The cow-chalets and huts of Spitalmatten had disappeared, smashed into splinters and blown over the alp, while all the inhabitants had been killed instantaneously and their corpses buried, some thinly and some deeply, by the *débris*; two bodies have only recently

been found. The body of the Vice-President was found lying 180 yards away from the hut. Another body had been flung into the branches of an uprooted tree, while a third was found still holding a stocking in one hand, having been killed in the act of dressing. The clothes had been partly stripped from those who were dressed, and the legs and arms were in several cases broken. The two bodies so long missing were those of the herdsmen who had already gone out to collect the cattle and were buried by the main body of the avalanche, which, it must be remembered, did not reach nearly to the chalets. It was evident that the men had just risen and were about to go out on their duties when overwhelmed, practically without warning, and wholly without chance of escape. The time from the breaking away of the ice mass till the avalanche struck the huts was little more than 60 secs. The herds were almost entirely destroyed, 158 cows being killed either by the direct fall or, as happened in the great majority of the cases, by the wind and ice-hail of the avalanche. They seem to have been blown like leaves before a storm to enormous distances, and thrown high up on the Uschinen Grat. There is evidence that many were carried for 500 m. to 1,000 m., and left 250 m. to 350 m. above the place from which they had been blown. Baulks of timber 10 ft. to 12 ft. long and 9 in. or 10 in. thick were found on the Uschinen Grat at a height of 2,180 m.—more than 120 m. above the hut of which they had formed part. This hut was one situated midway between the Arvenwald and Winteregg, about *b* on the plan. It stood much higher than the Spitalmatten chalets and much nearer the Grat. A year after the disaster the timbers could be seen lying on a mass of scree-like material on the slopes of the Uschinen Grat. This apparent scree was really solid ice, and was part of the main fall. It is not a perfectly obvious problem how these timbers came to lie on the *surface* of the avalanche which carried them away. Close to this spot the body of a cow was just beginning to appear through the melting ice after a year's entombment. The contents of the huts, the dairy produce of the summer, were scattered and destroyed; all, save 150 cheeses which resisted a convulsion of Nature of even these dimensions—striking evidence of the solidity of Swiss cheese.

Travellers over the pass the day after the disaster met a sad and solemn procession wending slowly down the steep zigzags overlooking the valley of Leuk, carrying to their native villages the bodies of those who, in the discharge of

their duties to the commune, had been so suddenly and terribly destroyed.

To return to the consideration of the avalanche itself: the whitening of the ground produced by a thin coating of the fine ice-powder scattered by the wind of the avalanche was very temporary, a few hours of sun serving to dissipate it, and rapidly convert even the more thickly covered portions from white to black. Indeed, after the first 12 hrs. had passed there seemed to have been but little gross change in the avalanche *débris* until I saw it myself on September 21, ten days later. Coming over the Gemmi from the Rhone Valley it was not until we arrived almost at the Schwarenbach Inn that the Altels and the first sign of the catastrophe appeared. Behind the shoulder which cuts off all view of the



Description of Section.—The section passes through summit of Altels to a point in Ushinen Grat in the central line of fall. The thick line represents the portion of glacier which fell.

Spitalmatten basin, and under which lies the Schwarenbach Inn, rose the pyramidal peak of the Altels, showing, on its western face, the glacier cut away sharply by a vertical ice-cliff, and presenting a parabolic concavity facing downwards. The glacier looked as though a huge bite had been taken out of it. On the right or south side of this western face was seen a long finger-like projection of the glacier, which always protruded from the main mass, and which remained undisturbed, though there is evidence that part of the avalanche passed over it. On the sketch map this tongue is shown at the left of the Altels glacier below the fall. On rounding the shoulder the whole scene of the disaster came into view. To anyone who has a preconceived idea of a plain covered with glittering ice-blocks and fallen seracs the reality was disappointing. The basin was covered with a black mass, resembling a mud- rather than an ice-avalanche, and it was difficult even, as so often occurs in the Alps, to realise the

magnitude of the fall in this bird's-eye view. It was evident from this point that the avalanche presented an outer comparatively thin zone and a central area where the fallen material was thicker and more irregular. Just below us lay the little forest of the Arvenwald, divided sharply into two portions, one intact, and the other having all its trees laid flat in parallel rows like swathes of corn. The trees of the Zagenwald, nearer to the fall, but on the E. of the valley, were, on the contrary, perfectly unharmed. Scattered over the black mass of *débris* were white, glittering blocks of ice or mixed snow and ice, indicating the origin of the fall. High up on the banded walls of the Uschinen Grat were dark stains produced by the melting of the masses of ice thrown up on the slopes. Below this ridge, at the line marked *b* on the map, was a thickened heap of material produced by a back stream from the Grat, the sides of which were too steep to allow of the material coming to rest. Similarly at *c* and *d* were two bare places produced by a slipping backwards of the *débris* on the steep sides of some small elevations in the valley.

Descending from our point of observation we found, on reaching the outer avalanche zone, that the whole valley bottom, which at this point is almost filled by the stony bed of the Schwarenbach, looked as though it had been covered with a thin layer of mud and small stones, and then combed with a gigantic rake in radial lines, which start from the foot of the rocks below the Tatelen. It was evident, too, that these radial lines did indicate the line of action of the destructive force, for while the lee-side of hummocks and rocks was perfectly protected, the exposed sides were plastered with mud, stones, and ice, and the uprooted trees of the Arvenwald all lay in the course of these same radial lines. The Arvenwald covers a series of small hillocks, and in one of the small hollows between these—but still in the zone of uprooted trees—lay a little chalet, absolutely intact, not a roof-shingle disturbed. Between the streaks of *débris* lay bands of untouched soil, on which the grass, plants, and small bushes grew unharmed. It was, in fact, a striking feature of the avalanche, as has been carefully pointed out by Professor Heim, of Zurich, that there was absolutely no evidence of any plough-like action on the soil. The material of the fall appears to have spread over the ground like water, shaving off the grass, and carrying away superficially-rooted plants, but leaving the earth almost intact. The feature is well seen in the bare patches which exist in the midst of the direct

track of the avalanche (*c* and *d*), where the *débris* has fallen back and uncovered the ground.

Reaching the central zone of the covered area the thin layer of black *débris* gave place to large irregular masses of mud-like material, forming a coating 15 ft. or 20 ft. in thickness. This mass, black as a cinder-heap, really consisted of a kind of ice-conglomerate, covered by a very thin layer of mud and fine black gravel, which hid in a remarkable way all ice-like appearance. Walking over this was like walking over a thinly-covered moraine, where one was constantly—and sometimes disagreeably—reminded of its true character and the proximity of the ice. A path had been cut over this region, but owing to the constant melting of the ice it was not very sound, and some care was necessary to avoid stepping into various unexpected cracks. Where no road had been made these cracks became veritable crevasses, which afforded a correspondent of the 'Patrie Suisse' an opportunity of showing his courage and resource. A lady—English, of course—exploring the avalanche, fell into one of these crevasses, and was unable to extricate herself. Our correspondent, however, with courage, and the aid of a pine-branch, succeeded in extricating her *sans jupes mais avec sa vie*. The skirtless lady showed her gratitude to her rescuer by drinking a bottle of Bouvier with him at the Gemmi Inn, and thus proved that he had not had to do *avec une ingratitude*.

The avalanche area stopped abruptly at the Kandersteg side, and it was remarkable to step off the fall on to the well-kept and intact path, and in a few strides to lose all sight of the disaster. At this point there was a noticeable feature in the shape of a piece of uncovered ground between two portions of the main avalanche. This is not due to any leaping of the mass, but to the fact that the tongue *e* is really due to a back flow of the original material.

To turn now to a few details as to the mass and force of the fall, for which I am in part indebted to a description by Professor Heim. The portion of the glacier which broke away lay at an altitude between 3,000 m. and 3,300 m., and the line of rupture, which is almost parabolic, is a new fracture lying some 50 m. to 80 m. below the true Bergschrund. The walls of the ice-cliff measure about 40 m. in height as a maximum, and average from 25 m. to 30 m., except at the sides, when they sink rapidly. The area of the rock exposed by the fall measures some 180,000 square metres, and this space and its bounding wall of ice, 120 ft. high, can be seen from long distances, as much as 140 kilometres; its appearance from

Frutigen, some 20 miles as the crow flies, is shown in the sketch.

Taking the average thickness of the ice at 25 m., this gives for the mass of the avalanche four and a half million cubic metres of ice—an estimate certainly below the truth. This gigantic mass fell through a vertical height of 4,700 ft., in a horizontal distance of less than three kilometres, $1\frac{3}{4}$ miles.

A glance at the section, which is on the same scale both in horizontal and vertical measurements, shows the track of the avalanche. The upper 1,000 m. has an angle of 30° to 36° . This angle at the Tatelen plateau sinks to 10° , and the final slopes above the valley again rose to an angle of 25° . The mass of ice appears to have begun to move *en bloc*, the breadth of its track being 600 m., but as the pace increased the ice became broken up, the centre moving faster than the sides, until the fall poured like an ice-river down a track diminishing in breadth to 250 m. Reaching the outer edge of the Tatelen, the whole mass appears to have sprung through the air, clearing the rock-slopes and pitching directly into the valley bottom. It was at this period of its course that the maximum wind-effects were produced. The compression of the layer of air between the slopes of the Tatelen and the backward dropping mass caused a blast which, acting on the crushed and disintegrated mass, drove out the clouds of ice-dust, stones and mud, which form the outer zone, and caused the destruction of the trees of the Arvenwald.

That this was the way in which the wind acted, tearing off the sides and lower surface of the avalanche, is indicated by the fact that the radial lines of distribution, mentioned above, start not from the central line of the fall, but from the edge of the mass, and spread out like a fan. The great majority of the trees, which are mown down, but not carried away by the wind, lie in lines corresponding to these radii; but it appeared to me that others, especially those nearest to the Uschinen Grat, were lying at a greater angle to the central line, as though the blast had been compressed by the bounding walls of the valley, and forced to travel in the direction in which the valley was most open.

The wind-blast seems to have preceded, probably momentarily only, the hail of ice and stones, for the sides of the trees which are stripped by the blast are those which are unprotected in the *fallen* position. The way in which the avalanche spread over the valley, up the Uschinen Grat, and over its crest, 1,500 ft. above the lowest point of the fall, has

been already described. The rate at which the ice would be moving at the end of the fall is about 118 m. per second, and its average velocity between 50 m. and 60 m. per second, or over two miles a minute.

The main mass of the avalanche covered about one square kilometre to the average depth of 5 m., so that the $4\frac{1}{2}$ million cubic metres of ice had become increased by stones, mud, &c., to about 5 million cubic metres. Adding to this the area of the outer zone, the total ground covered by the *débris* was, in round numbers, two square kilometres, and the total mass $5\frac{1}{2}$ million cubic metres.

It is difficult to realise these vast figures, even when expressed in familiar English terms, and a few comparisons have been suggested which may help to give some idea of the forces which were called into play. The material which fell would have sufficed to bury the City of London to the depth of six feet, and Hyde Park and Kensington Gardens would have disappeared beneath a layer six and a half feet deep. The enormous energy of the moving mass may be dimly pictured when we think that a weight of ice and stones ten times greater than the tonnage of the whole of England's battle-ships plunged on to the alp at a speed of nearly 300 miles an hour.

Owing to the fact that the Altels is ice-covered to its top, there is practically no moraine, lateral or terminal, and although there was in all probability *débris* in the hollow on the Tatelen, yet the avalanche is very free from stones, the proportion not being more than one to two per cent.

One of the great elements of destruction by avalanche—the damming of the rivers, and subsequent inundation—was in this case happily not active; although the avalanche crossed the track of the Schwarenbach, and in part blocked it, no stopping of the river or formation of a lake occurred.

The cause of the avalanche seems undoubtedly to have been the excessive heat of the summer of 1895, and of the two or three previous years. The Altels glacier lies in the zone where the earth temperature is, on the average, a little below 0° C.; and, as a rule, the temperature of the rocks below the glacier ranges between minus $1\cdot5^{\circ}$ C. and 0° C. The bed of the glacier is so steep and smooth that the ice must fall but for the fact of its being frozen to the bed. The rocks of the mountain may this year be assumed to have been nearly 5° C. warmer than usual, so that the temperature of the glacier-bed, as the result of a summation of the effect of the three preceding summers, probably ranged from 0° C. to 1° C.,

and the fall took place owing to the loosening of the cohesion between the ice and rock.

History repeats itself. One hundred and thirteen years earlier, in August of 1782, an almost similar fall of the same glacier occurred, and the remembrance of it still lingers in the villages around Leuk. It was accompanied by almost exactly the same precedent conditions, and the results were curiously similar. The 1895 disaster resulted in the death of six men, 158 cows, and some nine or ten other domestic animals, a fertile alp was destroyed, and the whole damage was estimated at about 135,000 francs.

Could this accident have been foreseen and avoided? It is easy to be wise after the event, and many are found who state that widening of the crevasses and other signs were present which should have given warning. These statements appear, however, to be products of the imagination, stimulated by the disaster: and, in fact, all active remembrance of the 1782 fall having disappeared, there was nothing to suggest the occurrence of an avalanche this year. Had the disaster been foreseen, nothing could have been done to avert it, but the lives of the men and their herds might have been preserved.

The very practical question arose as to whether any further fall was likely to occur during the days immediately following the first fall. This uncertainty had its commercial aspect in the keen eyes of one of our American cousins, according to the anecdote related to me by two travellers who had crossed the pass one or two days after the fall. They found a gentleman who had ridden up to look at, but not to cross, the fallen mass, who, after fairly warning them of the danger of the passage and the risk from overhanging ice, and finding them still persistent, offered to insure them in his company at a dollar per thousand. The offer apparently was not accepted, and the dollars were saved.

Though warning was wanting this time, the recurrence of meteorological conditions similar to those of the past years will cause insecurely perched, hanging glaciers to be looked on with suspicion, and precautions to be taken to avoid disaster.

What will be the permanent result of this avalanche? In 1895 Professor Heim prophesied that in a couple of years the ice would have melted from the pasture, leaving it covered with rock, dust, and stones. Though, doubtless, this will happen in time, last year's progress would seem to indicate that this estimate of the period required is unduly optimistic.

There is an enormous mass of ice to be melted, yet sooner or later the old grass will reappear and spread over the thin coating of bare soil, and though for some time after this the pasture will be poor, yet with a little labour, and the lapse of a few more years, the alp will once more serve as a summer grazing-ground for the Valais cattle, and the memory of the catastrophe be only a legend deepening the hold of the 'Mountain Gloom' on the inheritors of the 'Mountain Glory.'

THE AIGUILLE DE TRONCHEY.

BY THE EDITOR.

(Read before the Alpine Club, May 4, 1897.)

WHEN the mysteries of battels were explained to a Freshman at Oxford, in my day, I remember that one piece of information usually vouchsafed was that fagots included cream. Let me hasten to inform my readers that the title 'The Aiguille de Tronchey' includes all the climbs that the weather allowed me to accomplish in 1896. 'All,' you will say to me; 'I know not what ye call all.' 'Is it ten, or twelve, or twenty?' Alas! no; 'tis three!

My first impulse, on sitting down to write this paper, was to make a sort of anthology of abuse, a catalogue, in fact, of expletives, suitable for firing off at intervals, and copy one or two chosen morsels in the middle of each page, with the certainty that they would come in naturally and meet—if sufficiently strong—with the approval of all mountaineers whose fortune led them to the Alps in 1896. But I gave it up, through sheer inability to find words adequate to express my feelings on the subject. Never before have I noticed such poverty in our native tongue; but I feel that in this failure I shall have the sympathy of you all.

We were attended by a bad omen at the very outset, for the bigger of our two horses lay down just as we were starting, smashed the shaft, and generally delighted himself; but when, after an hour's interval, as the driver was burrowing for wine in a wayside inn, he meditated a second edition my patience reached its limits. Just as he was tucking himself in with a languorous enjoyment I bestowed the stick upon him with such effect as to drive out of him the passion for acting as though he were a buffalo at large. Then the wind rose, the rain asserted its right to bully us, and we were



Tempest Anderson, Photo.

AIGUILLE DE TRONCHEY FROM THE SLOPES OF MONT DE LA SAXE.

Swan Electric Engraving Co.

thoroughly drenched. Falls of rock lay thick on the road, our lamp was literally blown to pieces, and, after quite an eventful journey, which the ladies of the party supported with admirable patience, we accomplished the passage of the St. Bernard; and, after a due amount of drying at Aosta, where we were joined by my guides (François and Sylvain Pession, of Val Tournanche), ventured to Cogné. One little incident I should like to mention, as it is characteristic of travel in Italy as I have generally found it; the douaniers of St. Rhémy treated us with the most courteous consideration.

About 4 o'clock on the morning of August 10, when half-dressed, I was solemnly invited by François to walk as far as the balcony and inspect the weather. I did so, and said, rather to my own surprise as the words escaped me, 'Very good. Let us start.' Was then the prospect cheering? Nothing of the sort. Did I expect a fine day? Nothing of the kind. My determination was due partly to the fact that I thought I was expected to say, 'Let us go to bed again,' and partly to the recollection that on the previous morning the appearance of the weather was exactly the same, and yet in the afternoon I had persuaded myself that we might possibly have succeeded.

But why relate how we made a third-rate pass, albeit of over 10,000 ft. The flowers would have been glorious if it had been fine, and as the mountains were wholly new both to the guides and to myself, if only the sun had smiled on us we should have had a delightful day. Though I have never felt inclined to say, with Shelley, 'Pansies let my flowers be,' yet to-day, with the encumbering moisture of the snow upon them, they pleaded so pathetically for favour, that I joined the ever-increasing band of their admirers. As for the forget-me-nots, no blue that ever shone in heaven or earth—or even in the poet's dream—could surpass their loveliness. After leaving the Chalets of Arpisson, the view from which is famous, we struggled over our pass—the Col de Pila—in a paltry snowstorm, and descended on the Grauson side in wan waves of mist at a great pace. It may be quite true, as a philosopher reminded me not long ago, that—

Patience and Perséverance
Made a bishop of his reverence,

but all they did for us was to send us home peakless. And yet one sight I saw that noon was worth the discomfort of a dozen snowstorms. As the summits were wreathed in cloud, and the upper part of the Glacier de Grandcrou swathed

in grey mist, the torrent of the Valnontey suddenly appeared, as it were out of heaven, and fell from height to height in a most amazing fashion. The atmospheric effects, by some strange process, greatly exaggerated the steepness of the Valnontey. It was as though an extra stanza had been added to the 'Witch of Atlas.'

Though I had not to complain of the transformation of my bedroom into a Necropolis, as some vivacious humorists had hinted might happen to me, yet, as the old gentleman at the general store remarked, 'You cannot, Milor, remain at such a place as this in such weather.' So from Cogne we fled to Courmayeur, and on the way actually derived some benefit from the new snow. The Nomenon shot up through the mist with an audacity that delighted us; the majestic Grivole flung back at intervals her clinging raiment, and revealed to us the argent splendours of her northern ridge and E. face; and as for the Péteret, as ever and again a torn cloud streamed from his rugged head, he looked as though, with a little favour from the handicapper, he might compete with the Matterhorn. At Courmayeur, amid the Capuan allurements of the Royal, we gradually recovered our spirits.

On the afternoon of August 13, François and Sylvain Pession and I left Courmayeur with the intention of sleeping at the Triolet hut and attempting the ascent of the peak which lies between the Col du Piolet and the Col de Talèfre, and rejoices in the words 'No Information' in M. Kurtz's excellent 'Climbers' Guide.' If it be the fate of the sheep so often described as patient of wrong to play 'the aggressor,' yet he can occasionally, when alarmed, play the aggressor with much effect. I remember to have heard a story of a boy, possibly of Numidian descent, though I cannot affirm it, who was asked to write a character of Jugurtha. He said: 'If left in peace Jugurtha is a lamb, but if roused he is a lion. The fault, therefore, is with those who rouse him.' So doubtless with the sheep whose business it is to get a living on the slopes below the Triolet glacier. The fault lay with us. We roused them, and in consequence they rushed ahead of us, sent down stones which caused us considerable danger, and compelled us to climb up by a route much more difficult than the ordinary one. They were obviously 'misonéistes,' and hated anything in the shape of a traveller.

I should imagine that in a summer like that of 1895 most of the slopes above the Triolet glacier would be raked by falling stones, but in 1896 the snow was piled so deeply in most

places that all such missiles were imprisoned. The glacier at first was fairly good, but as we ascended the snow grew gradually worse, though no crevasses worth speaking of troubled us. What did trouble me was that I could see no place where we could glissade with ease, or even with difficulty, on our return journey. As we drew near the actual foot of our peak the leader's work became more exacting, for here the snow was very soft, so Sylvain took François's place. With effort we made good our footing on the steep slope above the glacier, and when it was possible worked up the rocks. The snow was deep, and we often sunk in well above our knees—not to say armpits—when passing from snow to rock or from rock to snow.

Here and there we met with steep narrow ridges of snow, and Pession, who had resumed the lead, was very careful to make certain of going up the exact centre of them, as it would have taken very little to start an avalanche—in fact, we saw several small ones, and I heard Pession mutter his dissatisfaction. But notwithstanding that the work was unpleasant nothing untoward took place, and we eventually reached the summit ridge. There are four little points to the peak, the one nearest the Col du Piolet being the lowest, and we were in some doubt as to which was the highest. The men pronounced for the second point counting from the Col de Talèfre (the third from the Col du Piolet). I was only too glad to get a decision, and offered no criticism. It is possible that others may do so.

We did not build a cairn, but at Pession's suggestion I left a sixpence in a crack of the topmost rock. The way had been long, though the wind had not been cold; nay, the air had been warm, but on the top the gusts were keen. Yet I was content to remain there for the sake of the glorious view.

A world of mountains revealed themselves to us. Their number was endless, their splendour ineffable, and their names well known—or at any rate should be so—to all climbers. And as—as I think has been observed before—it is difficult to add a charm to an oft-told tale, you will expect from me a decent reticence on this point. The guides were much interested, as this was their first visit to this part of the chain.

In the descent, which was laborious, we kept during the latter portion more towards the Col du Piolet than in the ascent, a plunge into snow up to one's armpits being no uncommon interlude. An occasional ejaculation of Pession's reminded me of the birthday-book series of exhor-

tations which I used to listen to with delight of old:—‘Place well your feet.’ ‘Drive in your heels.’ ‘Derange not the step.’ ‘Stand quite upright.’ ‘Good, very good.’ I should say that his choice of route impressed me much. No one without a thorough knowledge of snow work would have ventured to leave the rocks where we did and take to such steep snow; for the snow next the rocks was rotten, and it was not till we had taken some steps that it inspired any confidence.

On arriving at the Bergschrund Sylvain sat down and shot across. I did the same, and went into the snow so deeply that my struggles almost dragged Pession over the chasm prematurely. Then we felt that all was well, after a little time rejoined our morning’s route, and strolled into the hut, I being easily last, somewhere about 6 o’clock. I may here mention that we found so many butterflies on the mountain that I thought of calling it the *Pointe des Papillons*, but the comparative insignificance of the peak turned the scale in favour of the less pretentious name.

I was aroused about 11 o’clock to find Pession suffering from snow-blindness, and though he made light of it I am afraid he suffered a good deal. It was only after the application of raw veal on the morrow that he recovered. In the morning the valley was full of clouds, and we returned to Courmayeur. On the way we passed many Martagon lilies, and the finest *Gentiana purpurea* I ever saw.

On our way up the Val Ferret I had been much attracted—‘envasselled,’ if I may be allowed a seventeenth-century word—by a beautiful peak in the ridge which runs from the Grandes Jorasses to the Aiguille de l’Evêque, and the guides had carefully examined it at my request. It is not marked on M. Kurtz’s new map, but appears anonymously in the ‘Climbers’ Guide’ with a height of 11,483 ft.* Its obvious name from the glacier on its west and the chalet below was the Aiguille de Tronchey. The more I thought of it, the more I desired to climb it.

But though the peak delighted me and the guides were keen to tackle it, I did but snatch a fearful joy till we were actually on our way up it. ‘Not Lancelot nor another’ was to be favoured. It was after all to be ours.

The only question was the weather. On August 18 that was propitious, so we started for the new peak under the most gracious influences, for the ladies of my party accompanied

* Taken from Mieulet’s map.

us for some distance. We had tea among the pine-trees by the torrent, and the sun shone and the air was soft and the water murmured pleasantly, as though such things as snow-storms had retired from business altogether.

The ladies were so far Russophile as to accept my proffered slices of lemon, and fanned by the tea's gentle stimulus we discussed such obviously natural topics as the Col du Géant, which the ladies had visited on the previous day, as well as climbing in general, and 'furens quid femina possit' in particular. The true translation of these words I only discovered some time afterwards, when I learnt that a lady had had her bicycle carried by two porters over the Col du Géant. To what will not the accursed love of 'records' drive us?

At last Pession, perhaps a-weary of so frivolous a discussion, suggested that it was still some distance to our resting-place for the night, so we said good-bye and moved on lazily to La Vachey. The herdsman was a kindly host and well pleased to entertain us. He pointed out to us a small flock of sheep on the wild slopes of the Mont Gruetta. They are driven there for a sojourn of two or three months, during which time they must, as the Yorkshire phrase runs, 'fend for themselves.' But when he learnt our errand from the guides he offered one more illustration of the lines, if I may adapt Mr. Coventry Patmore—

How strange a thing a climber seems
To animals that do not climb.

He took no interest in the sparkling spire—it is not, so far as I remember, visible from La Vachey—that was to be the goal of our enterprise. But he knew the signs of the weather, as men who have been much alone with Nature so often do. He warned us that an evil time would shortly be upon us. Nor was he deceived. The guides reposed on hay. I had the comfort of a clean though rough bed in the same barn, and slept well, the sound of the goat-tinkled bell notwithstanding.

A start was made at 2.40 A.M. with two folding lanterns. We went astray a little in the flat marshy ground on the right bank of the torrent, scrambled through the forest and up the loose stones of a steep slope, occasionally a torrent bed, above it. At 4.48 we halted to wait for the light. At 5.57 we reached the edge of the snow, and went on, after a meal, at 6.32. We kept to the east of the Glacier de Tronchey, the ice of which we never touched at all; crossed a stream whose volume we were to find much increased on our descent;

got up the steep rocks on the right of it, and at 7.30 put on the rope. We went on at 7.43, crossed the little stream several times—as far as my recollection serves—reached a sheltered place at 9.3, and after a slight refection continued the ascent at 9.47.

I much regret that I am not able to describe our climb stride by stride, handhold by handhold. The fact is that I am never sufficiently ready with my pocket-book. There is always something more attractive to make one forget the taking of notes. Now a well-marked rock that involves the problem When shall we get to it? now a glimpse of the torrent flashing among the pine-trees far below; now the rosy phantom of a cloud; now tiny but richly coloured blossoms,

Like bright eyes of familiar friends,

glowing softly in their crevice homes. But I forget; this is only in the Graians. It is not that I did not enjoy it; for though one's most thrilling memories are probably—in my case certainly—associated with steep ice-slopes, yet for continuous enjoyment what can beat a new route up steep rocks? The rocks *were* steep, the incidents of our ascent fairly varied, the leading of the guides admirable, and my satisfaction infinite, and yet I cannot describe the climb in detail. One detail, however, I still recall—a frequent outcry on my part for halts. I was reduced to ask 'Where are now the chamois?' (we had seen two—a perfect godsend), or to call attention to the view (oh, ancient but oft-recurring subterfuge!), or even to be so superfluous as to demand the time of the day.

By-and-by we got to very steep but very soft snow. Pession's legs are long, and his reach is amazing. Whether he heard me groan louder than usual as I struggled to get my leg out of the depths of one step into the abyss of the next so far above, I do not know, but he suddenly looked down and inquired quite effusively, 'Are the steps to your mind?' 'Well,' said I, 'they are a long way apart.' 'That's to prevent their being crunched out,' he answered; and then he regarded me with something of the school captain's glance when he superintends the little boys' football and says to a novice, who would fain show the importance his opinion carries at home, 'Shut up jawing, and get into the scrimmage.'

At last, after passing some rocks, we reached the beautiful snow ridge which curves round northwards to the summit. Pession advanced carefully, mindful of the dangers of a latent

cornice, peered over and saw all was well, while I held the rope tight. Sylvain and I followed, and at 12.4 we reached the top. A good shove from Pession placed my hands on the highest rock. I descended—on his head, by the way—and we sat down to enjoy our triumph. Now, too, we were in a position to appreciate the truth of an anonymous poet's words:—

If you would know the mountain-peak,
How steep, how grim, how tower-like,
The green vale at its foot you seek,
With meads and forests bower-like :
It follows that to know the vale,
How soft it smiles, how sweetly,
The lordly mountain you must scale,
And sweep the vale completely.

We had left the provisions below, and had brought so little wine to free our souls from human trammels that I was enticed into moralising—a crime which a hard climb after the excitement of success is over has occasionally a tendency to encourage. Can it be a form of self-satisfaction? Very likely. But do we not all at such times experience a strange, perhaps an exaggerated, sensation of sympathy for the peasants whose dwellings we see so far below us, when, as sometimes happens, our summit gives us not only the strong mountains and the eternal snows, but the village with its storm-battered roofs, softened by the twinkling sunshine, or the weather-worn hamlet with its fringe of pines? What is it which causes the stress of feeling that moves us so strongly? Not, I think, our joy in their tiny cornfields or protecting forests, or the matchless green of their little meadows, that not in vain desire the water-brooks, but that thrill of feeling born of sympathy for those who have toiled much and suffered much—that appreciation of the pathos of a life of struggle which Vergil would have given us in a 'lonely word.'

After all, the Aiguille de Tronchey is but a secondary peak, though I believe it to be considerably higher than the estimate given in the 'Climbers' Guide.' The guides are, I may add, of the same opinion. Did I then repent the toil spent in climbing it? Emphatically no; for it was new; and the new peak, however inferior in mountain glory, after all supplies the doubt of eventual success, the possibility of adventure which no climb by a well-known route can provide. Not that I would be thought to depreciate the old peak. Nay! every fresh ascent adds to one's affection for it, but the satis-

faction derived is altogether different in character from that one enjoys on a new peak. We love not Juliet less when we read of Desdemona, but,

As one lamp lights another, nor grows less,

so we increase the number of peaks we know without lessening our affection for the peaks we have known.

I was once asked by a curious and fairly well-informed Italian miner whether a certain well-known English public man was married. 'Yes,' I replied, 'he has just wedded a lady who is very handsome and very rich.' 'Ah!' he rejoined, 'you cannot expect more than that from any woman.' Well, what can you expect more from a virgin peak than that she shall be very beautiful and very rich—in views; and of course I need not say difficult to conquer, as no doubt the bride above referred to proved herself to be.

We had glorious views, but a certain awe was upon us, for who can gaze at close quarters on the precipices of the Grandes Jorasses unabashed? Nor was it the sheer cliffs only which amazed us. Down them fell avalanches, many in number, hissing and hurrying—like Etarre's hand, small but cruel. I do not know that I have ever seen in the Alps a sight that impressed me more. Those terrible walls,

In craggy nakedness sublime,

What hand or heart shall dare to climb ?

I will not venture to say, whatever I may think, that they are absolutely impossible; but assuredly he who attacks them must make up his mind to say with Mezentius—

Nullum in caede nefas; nec sic ad proelia veni.

We departed at 12.50, after leaving our names in a bottle; and, going as hard as we could, reached the sheltered place, where we had a meal at 2.11. I went my hardest, for the men were afraid that the snow might give under us, or the stones, like discontented guests, leave early. Certainly speed was the safest policy, though no stones as a fact molested us. If the stones were making the special effort so fashionable nowadays, at any rate in advertisements, the descent would be distinctly exciting.

The little torrent which we crossed several times served as a sort of refrain to our climb. In the morning he had been fast bound in ice, but had now freed himself and poured over the sheer rock face in quite an imposing little cascade. But though the spray played freely on my shoulders, I waited as patiently as Xanthippe's Socrates till Pession had descended

to, shall I say, 'mid on,' and then escaped to the 'long field,' where Sylvain, who was doubtless revelling in the remark of his fellow-countryman 'Suave mari magno,' was laughingly awaiting me.

At 4.50 we left the moraine for the grass, and, quitting it at 5.12, did not reach the Val Ferret road till 6.37, for we made up for our hurry above by taking it easy. Moreover the bilberries were plentiful, and dead ripe. The guides went to La Vachey for our baggage, and I started across the marsh, where I found *Menyanthes trifoliata* in abundance. I sat down contentedly on a fence by the torrent and listened, on the confines of sleep, to its brawling. 'Be thankful for a very good climb' was about the English of it.

Then the guides came up, and all went well till we reached the church of Courmayeur. Here rain began; but what cared we? As I entered the Royal I heard the cheerful buzz of after-dinner conversation, but escaped to my room unespied, and, regarmented, supped in luxury. There was a ball that night. They of the Royal had invited them of the Angel, and they (the Angels, I mean) did not go home till morning. But sleep was not therefore murdered, for Morpheus, the only god, so far as my observation goes, that writers in this journal habitually mention, perhaps because they have so much need of him—Morpheus was too strong for Terpsichore's flute, violin, bassoon. I slept in peace.

SOME ROCK CLIMBS IN NORWAY IN 1896.

By H. C. BOWEN.

THE summer of 1896 was a remarkable one in many ways; not the least noteworthy feature was the contrast between the weather in Norway and the Alps. While in the latter, from all accounts, the three climbing months were one long, dreary succession of cloudy skies, and almost uninterrupted snow and rain, in Norway we were basking in sunshine, at any rate during August and the first half of September, with but one serious break of six days, just at the end of the former month.

C. W. Patchell and I reached Turtegrö, that charming little mountain inn, some 4 hrs. above Skjolden, at the head of the Sogne Fjord, on August 3. Johannes Vigdal had joined us *en route* at his native village, Solvorn, so that our party was complete. We had two preliminary expeditions, one up the middle Ruenstind by the E. face, which we fondly

imagined was a novel route—to be undeceived by a note of Slingsby's in the 'Alpine Journal,' vol. xvii. p. 950—the other a crossing of the Soleitind; and then, on Saturday, August 8, we started for the Skagastöltinder. A short description of the relative position of these will, perhaps, be excused by such of my readers as are not acquainted with the district. To the E. of the Skagastölsbræ there lies a great *massif* of rock, running, roughly speaking, N. and S., with three distinct peaks, of which the most southerly, and therefore furthest away from Turtegrö, is the Store or the great Skagastöltind, the middle one the Vesle, *i.e.* the little, and the most northerly the Mellemste, *i.e.* the midmost or central, though N. again of this last there is a rounded hump, dignified by the name of the Nordre Skagastöltind.*

Slingsby made the first ascent of Skagastöltind, as every one—at least every Norwegian—knows, in 1876, reaching the col (Mohn's Skar), between the peak and the Vesle, by a small glacier, which now bears his name, to the E. of the mountain; from this he reached the top alone by the N.E. ridge. The climb had only been once repeated (by the artist Herr Petersen, also alone, in 1878, after a plucky but unsuccessful attempt in 1877). This is not from any special difficulty in the route from the col, but because another way was found out straight up the E. face by the rocks and a chimney, which is shorter than the original route when the ascent is made, as is now invariably the case, from the N. side of the chain instead of from the S., as in 1876.

No one, however, had as yet climbed along the whole ridge, and traversed the three peaks of the range, though Herr Hall, the indefatigable Danish climber, had made several attempts; the great difficulty was a rock wall, or screen, some 30 ft. in height, between the Mellemste and Vesle Skagastöltinder, where the ridge appears to be cut off. It is well seen in the reproduction of a photograph, by Hall, in the 'Aarbog' of 1895, p. 60. The question was, which way to attack it. By beginning from the N.—that is, from Mellemste—a party would have to get *up* the screen; and this is what we determined to try and do. Leaving the little inn of Ivar Øiene at 8 A.M., we started in doubtful weather, walked up the valley until we were almost under Mellemste, and there took to the rocks. The conquest of this peak occupied some 2½ hrs., as there was one rather trying place, eventu-

* Ascended in 1820 by the plucky pioneers in Norsk mountaineering, Professors Keilhau and Boeck.

ally surmounted only by the leader standing on another man's shoulders and reaching the required hold. How Vigdal managed to steady himself as he did, with nearly 12 stone standing on his shoulders, remains a mystery to me to this day. To cut matters short, at last we reached the crux of the climb. At first sight it certainly did look a difficult problem. One thing was plain—namely, that a way straight up the curtain was impossible; it was nearly vertical, and overlooking a grand precipice above the Styggedalsbræ, and the cracks in it would give no effectual help of any kind. On the right, or W., side the curtain hung over the arête, so to speak, and there was obviously but one way to try—to the left. Some 6 ft. above a small platform there was a kind of chimney, tight enough to jam oneself in securely; this contracted into a crack leading up to a large block of stone, which in turn brought one out to the top. First one and then a second was shoved up into the chimney, and the leader was able to work his way up to the great block by the help of an axe in the crack. Our difficulties were then over, as the block proved easy to surmount. It was a pleasant climb from there to the Vesle Skagastölstind, and down to Mohn's Skar. Slingsby's route up Skagastölstind was interesting, as the rock is everywhere sound and good. As the descent by the ordinary route is very often made I need say no more.* The day proved a bad one; a dense fog enveloped us during the whole climb, with a fairly persistent fall of sleet and rain. We passed through Skjolden on leaving the Horungtinder, and Thorgeir Sulheim was most generous in his congratulations. When one considers that the district is, as it were, his own private preserve, and that he himself had failed on the very climb which we had the good fortune to bring off, it shows, I think, a magnanimity in him which is rather out of the common.

We crossed the Justedalsbræ by what has now become a common route from Ny Sæter, in Austerdal, to Briksdal,† and two days after made an attempt to force a way up the S.E. or E. arête of Lodals Kaupe; but, alas! it was not to be. The arête is tremendously jagged and broken, and though perhaps it might be climbed, it would require a night out to do so, or at any rate a very early start from Bødal Sæter. You can

* In the Yearbook of the *Den. Nor. Tur. For.* for 1897, at p. 54, there is a well-drawn illustration of a chimney on this route being ascended by three men.

† *Alpine Journal*, vol. xvii. p. 351.

get to this place by the little steamer which plies to and fro on the Loen Vand, and conveys the tourist to Kjændal, from which one can walk to the foot of the Kjændals-bræ, and look up at the huge broken icefall down which Slingsby came. Vidgal, who was his companion on that memorable occasion, had evidently seen enough then, for when we asked him to come with us he refused with a positive shudder.* The next day we said good-bye to him with much regret; he is an excellent companion and a good fellow. If one is ambitious to do all the leading work he is quite content to follow, ready to lend a hand, and absolutely safe on rocks. If, on the contrary, he is called upon to lead, I believe he does it very well, and though he cannot be compared with the best of the Swiss guides in mountaineering science he has, I venture to assert, more intelligence and more cultivation.

One week in the comfortable hotel at Øie, which we reached across country from Faleide, *via* Grodaas, was almost perfect in its weather, and the views from Slogen, Smörskredtind, and Skruven were most magnificent. We climbed a spur of Jagta that seemed to be new, and had some pleasant and exciting scrambling on the S.E. arête of the Gjeithorn, which is broken up by two or three gaps which were impracticable. From Øie, partly by road, partly by steamer, we got to the Romsdal, and came in for the first bad break in the weather. It rained from Monday till the following Saturday, on which day, however, Patchell and I were able to get up the Horn, a climb which is too familiar to need any description.

On Monday, August 31, we left Dale at 6 a.m. for Mjöltnir, † or the Kvandalstind, as it is generally called by the inhabitants. It stands at the head of the Kvandal and has a very imposing appearance from the road above Dale. Our information concerning it was, for various reasons, of a scanty nature, and any route up quite unknown to us. We had read, thanks to Baedeker, that it had been called 'one of the steepest mountains in Europe,' which was interesting but hardly useful knowledge. On reaching the head of the valley there are two glaciers thrown down by it, and we selected the left of the two and ascended by snow, rocks, and the trough of the left bank to the névé above the icefall, and thence to the rocky skar at the foot of the S.E. arête. This arête, which throughout afforded good scrambling,

* *Alpine Journal*, vol. xi. p. 148.

† For the paper describing the ascent of this mountain by Mr. C. Hopkinson see *Alpine Journal*, vol. xiv. p. 380, foll.

we followed until just under the great tower which can be seen very well from Dale. The rocks leading up to the tower looked difficult, and by a convenient ledge we turned left on to the W. side, and then back again over easy rock *débris* to the foot of the final peak, when we again took to the arête and reached the first top at 1 p.m. There are three summits, separated from one another by short distances, and the passage from the first to the others presents no great difficulties. The most exciting part of the climb is from the foot to the top of the first summit. The holds are everywhere good, but it is undoubtedly steep and severe work. With any ice on the rocks they might be somewhat dangerous. In the descent we avoided, as far as possible, the glacier below the icefall, as stones were occasionally booming down in an ugly way. The expedition, including halts, took 14 hrs., and can be strongly recommended, as there is a certain amount of ice work—more than one generally finds in Norwegian climbs—and excellent rock-climbing. The view from the summit is rather disappointing. The Söndmöre and Horunger mountains are rather too far away for effect, and the Vengetinder shut out most of the view on one side, though in themselves they are fine objects. The Horn is very dwarfed, almost absurdly so, and loses all its grandeur of form. Two days afterwards we ascended the highest Vengetind, and on September 4 crossed over to the Eikisdalsvand, taking the Gjuratind on our way, down to Hoem, where there are excellent quarters of a primitive kind. We rowed across the lake the following morning to Vike Sæter, and, mounting the long shoulder of the Aagottind, reached the cairn on the first top at 12.30. From this point an excellent ridge climb of some hour and a half leads to the highest point, though the ridge in reality is almost level. On a clear day it must be a beautiful expedition, as the Eikisdalsvand, one of the most picturesque lakes in Norway, lies at one's feet, running almost parallel to the ridge, flanked by the mountains on its W. shore. Unluckily we were enveloped in mist all day, and were thus deprived of one of the greatest charms in this climb. From Reitan, at the foot of the lake, an interesting pass leads back to Dale; it starts up towards the Mardölafos, along the high land above, and so over into Erstedal, and comes down into the valley by one of the worst and most dangerous paths I have ever met with either in Norway or the Alps.

I need add little more to this plain narrative of what is, after all, a not very eventful summer's campaign, though

perhaps from the number of expeditions—sixteen—and the peaks actually climbed—fifteen—it is worthy of mention in the 'Journal.' Dr. Claude Wilson's instructive paper in the thirteenth volume of the 'Alpine Journal' should be read by all who intend to climb in the country. It is really hardly necessary now to point out the differences between climbs in the Alps and in Norway. Glaciers are on a much smaller scale, generally speaking, and are very easy: on the other hand, those glaciers which come down from the Justedalsbræ are immense, and in August utterly impracticable. Take, for instance, the three arms of the Austerdalsbræ, where you have a sheer icefall of at least 2,000 ft., often swept by ice avalanches and broken up into the wildest and most extravagant shapes. One gallant Norwegian, Herr Bing, fought his way up the terrific icefall of the Brixdalsbræ on July 5, 1895, and had many adventures on the ice in 1894, which are described in vol. xvii. of the 'Alpine Journal,' and he deserves every credit for such feats of daring and skill. Early starts are hardly necessary in Norway. If one's party can get off by 5 A.M. it is quite sufficient for most expeditions, and the lantern need hardly ever be used. It follows that the days will not be exceedingly long ones: 12 to 14 hours *ought* to be enough for anything, and thus one is often able to climb on successive days without over-fatigue or inconvenience. To any one who is fond of rock-climbing pure and simple, and who has never been to Norway, my advice would be to go and try a season there, especially if he is lucky enough to find the weather such as it was during last summer. The food is not quite all that one can desire, and rye bread becomes a weariness to the flesh after long experience of it; but the country is a beautiful one, and the inhabitants are still, in the remote districts, as kind, as hospitable, and as unspoilt as ever.

ASCENTS IN MEXICO.

BY A. R. HAMILTON.

The heights given below for the four Mexican volcanoes have been supplied by Mr. D. Freshfield as the most recent and accurate determinations known to him, and superseding those given by Stieler and Chisholm. They are extracted from a paper by Professor A. Heilprin in the 'Proceedings of the Academy of Natural Sciences of Philadelphia, 1890.' They were apparently unknown to the writer of these notes, whose opinion of the height of Ixtaccihuatl they confirm.—EDITOR.

POPOCATEPETL (17,523 ft.).

ON August 29, 1895, Dr. Scheller from Washington and I left Amecameca, with our guides and baggage, at 2 P.M. and rode up

to the sulphur ranch, where it is usual to spend the night before ascending the mountain. This ranch is at an altitude of about 13,000 ft. A heavy rainstorm fell during the night and early morning, and it was not till 6 A.M., on the 80th, that we were able to start, feeling far from confident of success. We reached the snowline at 7.30, and sent back our ponies, which for the last half-hour we had been leading, the path being very bad and the animals very short of breath. After resting for half an hour, and substituting leather sandals and flannel bandages for our boots—a customary but absolutely unnecessary proceeding—we started on the final climb over soft snow and softer lava shale. It took us three hours' hard work to reach the lowest point of the crater, but the ascent was more laborious than usual, owing to fresh snow that had fallen during the night. Here we halted half an hour for breakfast, after which I left for the highest point with one of the guides, Dr. Scheller, who was feeling the effects of the rarified air, coming only a small portion of the way. There was a gale of wind blowing, and the new snow which drifted into our faces made progress rather difficult. My guide (?), who followed me at a distance of about 20 yards, evidently thought the whole proceeding to be a good example of an Englishman's idiocy. We reached the top about 12.15 in a more than usually objectionable 'tourmente' of snow, which hastened our return. The others were soon rejoined, and our descent through the snow and lava was so rapid that it was only half-past 2 when we re-entered the ranch. Amecameca was reached soon after 7.

IXTACCIHUATL (16,960 ft.).

Unsuccessful Attempt.

On September 1 Dr. Scheller and I, accompanied by a Mr. Paterson from Mexico City, left the latter place by the morning train for Amecameca, in the hope of reaching the summit of this rarely ascended peak. Unfortunately I placed reliance on some statements of one of the men who had accompanied us in the ascent of Popocatepetl, to the effect that he had been several times to the summit of Ixtaccihuatl, that the ascent was perfectly easy, and that there was no need whatever for rope or ice-axe. Leaving Amecameca about 1 P.M., we reached the cave at which we were to sleep, after a delightful ride and walk through forest land, just before dusk. Our three aneroids with singular unanimity gave the altitude of this cave as close on 13,500 ft.; a result which, judging from the time spent in the ascent, I should imagine to be very near the truth. The night was very cold and breezy, and, in spite of a copious use of firewood, we were not too comfortable, and were only too glad to start next morning at 5 A.M. An hour and a half's climb brought us to the snout of the glacier (15,000 ft. by two aneroids); and at this point my hero of Popocatepetl urged an immediate return, confessing that he had never gone further himself, and that he believed the mountain to be inaccessible. We

however, advanced up the left lateral moraine of the glacier, which soon merged into a snow-slope. This latter became gradually steeper and more icy, till at about 9 o'clock we found it impossible to proceed without danger, and were reluctantly compelled to return, as a steep ice-slope about 50 yards wide effectually barred further progress to anyone unaided by an ice-axe. This was the more annoying, as the further slopes were unmistakably of snow and not of ice, as when Mr. Remsen Whitehouse made his successful ascent.* On my return to Mexico City I had two ice-axes made for me, and twice left the city to have another try at 'the White Lady'—once on the Amecameca and once on the Puebla side—but on both occasions ceaseless bad weather obliged me to abandon the expedition.

NEVADO DE TOLUCA (14,954 ft.).

With Dr. Scheller again as my companion, I left the city of Mexico on September 5 for Toluca, which, after a run through some of the finest scenery in the world, we reached in time for supper. At this meal we were assured by one of our messmates that the ascent of the Nevado would probably be impossible, owing to the amount of snow upon it at that season of the year. We were somewhat astonished, therefore, when we started next morning, at 4.30, to find that the object of our quest presented the appearance of a bare rocky summit without, so far as we could see, a vestige of ice or snow upon it. The first part of our journey to Calimaya, a little village at the foot of the mountain, was accomplished in a four-horse springless wagon over the worst driving road I have ever seen. At Calimaya, after some delay, we procured horses, on which we rode to the tree limit, and then walked along a well-marked track to the crater, in which lie two sombre lakes. There is, according to the guide-books, a whirlpool in one of these lakes, but we saw no trace of it. Their height is about 13,500 ft. above sea-level; their depth, according to local tradition, unfathomable. We followed the edge of the crater towards the summit until we were forced to leave it by a high rock tower, which might, I think, have afforded some good rock climbing, but which we had not sufficient time to attend to, and skirted the obstacle on the inside of the crater. Here Dr. Scheller, who was much bothered by a rather large camera which he was carrying, decided to return to the lake. For the next quarter of an hour, until we again reached the crater's edge, the climbing was far from pleasant, the slope being very steep and the rocks large and most abominably loose. One which I just touched with my hand fell on my right leg and imprisoned my foot, and it was only by the aid of the Indian who accompanied us that I was able to free myself. It was most fortunate for me that I escaped without a broken leg, and as it was, the loss of all the skin off my shin and a nasty bruise to my ankle kept the memory of the Nevado de Toluca fresh in my

* *Alpine Journal*, vol. xv. pp. 268-271.

thoughts for many subsequent days. It was after 2 P.M. when we reached the summit, over which we crossed, and descended by a well-marked couloir of soft shale which led almost to the shore of the lake. We reached the latter in 20 min., the ascent from that point having taken just over an hour and a half. After a hurried meal we left as fast as we could for Calimaya; but night overtook us before we got quite clear of the forest, and the ride in pitch darkness for the last hour was more exciting than pleasant. Calimaya was reached a little after 8, and as soon as the moon rose we started again on our 2½ hours' drive in the springless cart. Three consecutive thunderstorms enlivened our journey to Toluca, where we arrived at 11.15, too late to get anything better for dinner than bread and cheese. At 4.30 next morning we had to rise to catch the 5.15 train to Mexico, and on our arrival at the station we found a telegram announcing a breakdown on the line, on account of which our train would not leave till 8.30. It really went at 8.15, and we nearly missed it. Eventually about noon we reached Mexico City.

CITLATEPETL, OR ORIZABA (18,205 ft.).

On September 26 I found myself in Puebla, balked by continual bad weather from any chance of ascending Ixtaccihuatl. The regular autumnal rains had evidently set in in that district, and anything in the shape of mountain climbing was quite hopeless. As the time which I could spend in Mexico was rapidly drawing to a close I determined to run down to San Andres, on the off-chance of finding the weather more favourable there. On the next day, therefore, accompanied by a Mr. Crewe Read from the Bank at Puebla, and armed with a letter to Signor Couttolenc, on whose property Mount Orizaba stands, I reached San Andres early in the afternoon by the Mexican Railway. Thence we proceeded by a little tramway to Chalchicomula, the village nestling under the shadow of the mountain, where Signor Couttolenc resides. The latter gentleman received us with every kindness, and insisted on taking all the bother of procuring guides, provisions, &c., upon himself, while we went for a short stroll to stretch our legs and try to get a glimpse of the object of our visit. In this we were most fortunate, for just as we reached the summit of a small cross-crowned eminence above the village the clouds, which had been hanging round the mountain all day, suddenly parted and disclosed the snow-capped peak glowing in the evening sun. This good omen, coupled with the evident fact that the weather was much better here than in the west, sent us to our beds with far more hopeful spirits. Next morning about 10 o'clock we started—a goodly cavalcade. Two guides, a man to look after the horses, a boy for odd jobs, a well-laden mule with blankets and food for us, two donkeys—with food for the horses, guides, and themselves—Crewe Read and myself on spirited chargers, made up altogether a most imposing procession. We made for the gap between Orizaba and the Sierra Negra, which, after a long but most delightful ride,

we reached about 8.30, and in another $\frac{1}{2}$ hr. we found ourselves at the cave, where it is usual to pass the night, at a height of about 14,000 ft. Owing to a goodly supply of blankets we spent a most comfortable night, and, starting at daybreak, reached the snowline, after a monotonous climb over grass and débris at 6.45. We were now on the western ridge of the mountain, just east of the fantastic rocky pinnacles, which are such a marked feature in the view of it from the line above Cordoba. Hence to the summit we followed the west ridge and west face of the mountain, into which the former soon merged. The climb was steep in some places, but never difficult; a fact for which we were sufficiently grateful as we neared the crater. The sun was scorching and the air quite still, the view so perfectly magnificent that it was manifestly the height of folly not to admire it at frequent intervals. At 10.15 we reached the crater, where, to my joy, I found I was able to make a good breakfast, which Crewe Read was unfortunately unable to do. We left this resting place at 11.15, a slight breeze having sprung up, and my companion feeling a little better in consequence. The summit was reached at 11.30. It is surmounted by a heavy wooden cross, which on our arrival we found broken, the top lying on the sloping inside edge of the crater, some 20 ft. below the summit. We rescued it and bound it with ropes to the part which was still standing; and having duly deposited our names in a bottle at its foot, we commenced the descent at 12. Poor Crewe Read was now seized with a terribly severe attack of sickness, but as the weather was looking very threatening, and some flakes of snow were already beginning to fall, we could not halt, though for some time our progress was very slow. The last part of the descent was accomplished by a sitting glissade, the Indian guides having brought mats for the purpose, and we covered about 2,000 ft. in a very short space of time; but even this did not help my companion to recover. He was still so bad when we met the horses that, having wrapped him up well in blankets (it was now sleeting hard), and made one of the guides lead his horse, I ran on to the cave to make things comfortable against his arrival, getting wet through *en route*. Twenty minutes after he arrived whistling, and saying he never felt better. We spent another comfortable night in the cave and returned to Chalchicomula next morning, where we were again entertained with the greatest kindness by Signor Couttolenc. He assured us that we were the first Englishmen to make the ascent, but I can hardly imagine that this is possible.

NOTE ON THE HEIGHT OF IXTACCIHUATL.

I feel sure that the generally accepted height for this mountain is too low. In all the guide-books it is put down as 16,060 ft. On the other hand, Mr. R. Whitehouse, one of the few men who have succeeded in ascending it, estimates it as 'about 18,500 ft., or 250 ft. lower than Popocatepetl.'* Now, if Mr. Whitehouse had

* *Alpine Journal*, vol. xv. p. 268. See Editor's Note, p. 456.

known the height which is now ascribed to Popocatepetl, his estimate for Ixtaccihuatl—*i.e.* 250 ft. lower—would make the latter 17,550 ft. This I believe to be rather too high. Judging from the vegetation, the time spent in ascending, and the combined readings of three aneroids, I am sure that the cave in which we spent the night was at any rate not less than 13,500 ft. above the level of the sea. Thence next morning we ascended over fairly steep slopes for $1\frac{1}{2}$ hr. before reaching the snout of the glacier, where the two aneroids we had with us gave our altitude as 15,000 ft. (I may mention in parenthesis that on my three other climbs my aneroid gave excellent results up to this height, if the guide-book altitudes for these other mountains are to be trusted.) From that point we mounted slowly for $1\frac{1}{2}$ hr. more, and must have reached a height of quite 16,000 ft. before turning back. At that point we were certainly another 1,000 ft. below the summit. Seen from a point on Orizaba about 1,000 ft. below the top, whence the two mountains are practically equidistant, Popocatepetl appeared to overtop its neighbour by about one-third of its snowcap, say 800 ft. This would make the latter about 17,000 ft. Finally, when climbing Popocatepetl, our one and only glimpse of the White Lady was from a point just half an hour before we reached the lowest point of the crater, say 800 or 900 ft. below the summit. At that point we seemed about on a level with the summit of the sister mountain; we were certainly not above it. From these varied observations I feel convinced that Ixtaccihuatl is, if not 17,000 ft. high, close upon it.

THE NARRATIVE OF AN ASCENT OF MONT BLANC IN 1830.

BY THE HON. E. BOOTLE WILBRAHAM.

With an Introductory Note by Douglas W. Freshfield.

The following account of an ascent of Mont Blanc in 1830 was found by my friend Mr. Comyns Tucker among the papers of a relative, and placed in my hands. It seemed to me that, although devoid of any particularly striking or stirring incidents, the manuscript deserved publication. In fact, the very favourable conditions under which the expedition was carried out gave it in my eyes a special interest for purposes of comparison with our contemporary experiences. After the manuscript had been put in type with the permission of the writer's son, General Wilbraham, the Honorary Librarian picked up a number of the 'Keepsake' for 1832 in which it is printed in full. The Editor does not think, however, that this previous publication need be any obstacle to its reproduction here. 'Keepsakes' of that date are not probably common in the libraries of our readers.

I will note briefly some of the points that strike me in Mr. Wilbraham's story. In the first place, what he says of the behaviour of the Chamoniards fully confirms all that was written (and, according to family tradition, De Saussure did not write nearly all he might have) as to the reluctance of the people of the valley to have anything to do with the mountain in early times. This reluctance on their part was, in truth, the chief obstacle De Saussure had to encounter both before and during his ascent. If, after one guide had made eight ascents, the

terror of Mont Blanc was still as strong as is here described, it is evident what it must have been forty years earlier. Probably it had been to a certain extent revived by the catastrophe met with by Dr. Hamel's party in 1820.

With regard to the physical effects of high elevations, it may be noticed that the party, under very favourable conditions, with 'hard and good snow,' took nine hours by the Mur de la Côte route from the Grands Mulets to the top. Similar parties (with one traveller only) take nowadays, on an average, three less. Mr. Wilbraham was no less than five hours from the Grand Plateau to the top. In 1863, by the same route, with a guide aged sixty for leader, the writer took three.

The account of the avalanches from the Aiguille du Midi, after allowing for a certain exaggeration, confirms, I think, the belief I have previously expressed that, *at periods when the névés are swollen*, the ordinary route up Mont Blanc is exposed to danger both where the glacier is entered and on the Little Plateau. Indeed, it stands to reason that a route which avalanches not infrequently traverse is unsafe. The danger is, however, confined probably (except as to falling stones from the Aiguille du Midi) to these periods, and consequently has been, and is likely to be, disregarded at all times by guides of only average intelligence.

The periods of swollen névés, of course, do not coincide with, but anticipate, those of the advance of the glacier snouts. It would be well if the now numerous writers who discuss glacier movements in Alpine periodicals would endeavour to bear in mind that snowy seasons are not immediately, or at any regular interval, followed by a forward movement of glacier snouts. The interval in each glacier must be regulated by the length of the frozen stream and the rate of its movement, and the latter will depend mainly on its mass and inclination. Another mistake writers on this subject do not always avoid is to exaggerate the influence of hot, dry summers in checking the invasion of the lower glaciers. In the first place, compared to the variations in supply in the névé basins, the variations in waste at the snout are insignificant; in the next, a wet summer may often cause as much, if not more, waste than a dry one.

DOUGLAS W. FRESHFIELD.

As I was ascending the Mont Anvert on August 1 with Pringle and the Comte de Hohenthal, the beauty of the weather and clearness of the sky put the idea of ascending Mont Blanc into my head. I made a few inquiries of our guide (Dépland), who said there was every probability of the fine weather continuing, and that it would be an excellent opportunity for doing so. He offered willingly to accompany me, but referred me to another guide (Favret), who was ascending the Mont Anvert with a party at the time, and who had been at the top of Mont Blanc already two or three times. I remained in a state of indecision till I reached the Mer de Glace, the first sight of which fixed me in my resolution.

I spoke to Favret, who tried to dissuade me from the attempt, but said he would accompany me if I was resolved on doing so. He told me I should find plenty of guides willing to go. On our way down we met Joseph Marie Couttet, the most experienced of the guides, who had already been at the top of Mont Blanc eight times. He said very bluntly that I had much better not attempt it, and would not even promise his assistance. On my return to Chamouni I went to old Couttet, the 'chef des guides,' who undertook to procure me six guides for that purpose. He also begged permission that his son might accompany us 'en amateur,' which I, of course, allowed. However, the son never made his appearance.

I ordered the necessary provisions at my inn, and remained

quietly at Chamouni for the rest of the day, in order to be as fresh as possible for the morrow. Six guides at length offered themselves, with whom I was about to close when the landlord of my inn (*Hôtel de Londres et d'Angleterre*) called me aside and told me that I should run a great risk with these men, if, indeed, they succeeded at all in bringing me to the summit (which I have now no doubt they could not have done), as they had, with the exception of one, never been up, and that one had never ascended by the new road.

After infinite difficulty, however, and long consultations, I engaged six other men—Joseph Marie Couttet, who had reached the summit in the last eight expeditions; Michel Favret, three times up; Matthieu Desailmond, never up; Alexis Devouassoud, two or three times up (these four were regular guides); Auguste and Pierre Couttet, cousins, the first a porter, who had been once up, the latter never, and who was to accompany us to the Grands Mulets, and go on with us if it was found necessary to have his assistance. I found a great reluctance to accompany me on the part of those who had already made the ascent. Couttet, indeed, warned me that I must not rely on the married men making their appearance; and the event proved he was right, as more than one, who had promised faithfully the evening before, never appeared on the morrow. I afterwards asked one of them (Julien) if he did not regret the not having been with me during so prosperous an ascent, but he told me that he considered his duty towards his wife and family forbade his ever again risking his life for so uncertain a gain. Indeed, he had reason to think so, for he was swept with Couttet into a crevasse by the slip of snow which destroyed three of the guides in the unfortunate expedition of 1820, and was saved by almost a miracle.

Out of the forty regularly established guides at Chamouni I could only procure four, with Auguste, a candidate for the situation of guide, and Pierre, the lad, as they called him, though a year older than myself. Having agreed on the sums to be paid them, a further agreement was made (as is always done) that in case we were prevented going any farther than the Grand Plateau only two-thirds were to be paid, and if we only reached the Grands Mulets half-price was all that they expected. I amused myself with reading Capt. Sherwill's account that evening, but found so many horrors in his recital that I closed the book, and determined not to read any more till I had accomplished my undertaking. I gave my purse and some papers to my landlord, with instructions what to do with them in case any accident should occur to us, and went to bed early.

Favret woke me early next morning in high spirits, for the weather was lovely, and after breakfast I set off on a mule at about half-past six for Couttet's cottage, which is at the foot of the mountain. A great number of travellers were setting out at the same time on different excursions, who all most cordially wished me success. Pringle and Hohenthal took the road to Martigny and the Grand

St. Bernard. When I arrived at Couttet's cottage I put on a broad-brimmed straw hat and blue cloth jacket and we proceeded on our way. I saw nothing but grave faces around me, and I fear I must have been the cause of great anxiety to many a friend and relation of those who accompanied me. At the moment, however, I thought little of this, as the only ideas that entered my head were those of success or failure. Not a cloud was to be seen and everything seemed in my favour. At the foot of the mountain I found the rest of my guides with some of their friends, who had volunteered carrying their burdens during the first part of the ascent.

I left Couttet's cottage at about a quarter-past seven, and for two hours I ascended on my mule through a steep, and in some places difficult path. I then quitted my mule and proceeded on foot for about half an hour, when we reached the edge of the Glacier des Bassons. Here our friends left us and each of our guides shouldered his knapsack. Our baggage consisted of the provisions, a linen cloth to serve for our tent, a couple of blankets, some straw, with a hatchet and some firewood. We had each a spiked pole about 6 ft. long; some of the guides had crampons for their feet, but I did not take any, though I afterwards found they would have assisted me, and should recommend everyone to be provided with them. We were three hours crossing the glacier, which we did without much difficulty. The surface was rough and we had to descend into many of the crevasses, which, however, are never there of any great size, in order to pass. We scrambled about from crag to crag (of ice), and I found myself highly amused at the novelty of the scene. The ice, which at first was almost blackened by the 'moraine,' or rubbish, became purer and more dazzling, and I put on a pair of green spectacles with gauze goggles which were of the greatest use, as my eyes scarcely suffered at all. The thermometer in the shade was at 13° above freezing-point (Reaumur). We were now on the upper part of the Glacier de Tacconai, which employed us about an hour more, when we at last reached the region of deep and perpetual snow. Here we found ourselves close to the Grands Mulets, our resting-place for the night, though, owing to some crevasses, we were obliged to make half an hour's détour, and finally arrived there at a quarter-past two, having performed our first day's journey in seven hours from Couttet's cottage—an unusually short time. The Grands Mulets are a row of pointed rocks, so steep that the snow cannot lie in any depth on them. On the western side is a ledge, which we cleared for our resting-place, of about 4 ft. in breadth, and about 100 ft. above the snow. We placed our poles leaning against the rocks and threw the linen over them as a defence against the night air, though it would not have protected us in the least in any hard weather: there is never any rain at this height.

We changed our clothes, which were wetted through by the snow, and hung them on the rock to dry; we sat down to our cold dinner with our legs hanging over the ledge of the rock, in high spirits at our hitherto successful journey. We enlivened ourselves afterwards with smoking and singing. Groups of people were assembled on the opposite point of the Breven to watch our arrival, and we had

the satisfaction of knowing that many persons were at that moment thinking of and perhaps envying us. On the Grands Mulets we found the remains of some firewood, two empty bottles, and half a bottle of excellent brandy, which had been left by Mr. Auldjo in 1827. Afterwards, on our return to the Grands Mulets, I ordered the guides to leave a bottle or two of wine for my successor, whoever he may be. The sun was exceedingly hot, and I scrambled into the shade of an opposite point of rock, where I amused myself by taking sketches of the wonderful scenery around me. On the left as I faced the summit were the precipitous crags of the Pic du Midi, on the very highest peaks of which I could distinctly see a large chamois bounding from crag to crag in the most extraordinary manner, as he was alarmed by the shouts which we raised to greet him.

From the steep sides of the Pic du Midi the greatest number of avalanches fall, which they did almost every minute, as the powerful rays of the afternoon sun had loosened the snow. They fell chiefly in a valley to our left, where we could distinctly trace them without a shadow of danger to ourselves. They were the first I had seen or heard, and those only who have witnessed them can imagine the effect they produced on my mind. We saw hundreds of them fall, though I believe none were considered as particularly fine; but during the night we heard some tremendous ones. There is something very awful in the dread silence which follows after the fall of one of these monsters. On our return from the summit we found that a large avalanche had fallen on the path by which we had passed a few hours before. We fired a pistol here repeatedly, but failed in producing any remarkably fine echo, owing, I think, chiefly to the badness of our weapon.

The view from the Grands Mulets is very beautiful. At our feet lay the valley of Chamouni in miniature. Above us rose the majestic summit, the object of all our hopes and desires; while to the right the Dôme du Goûter looked like an enormous mountain of itself. A small part of the Lake of Geneva is visible. Between us and the Dôme du Goûter lay a vast expanse of snow, with nothing to break the uniformity of its surface except the dark-blue edges of some of the larger crevasses which stretched across it, as if to forbid our further progress. Except the solitary chamois, no living thing was to be seen, though a few species of birds are sometimes found at this height. We now lighted a fire to prepare some lemonade for the next day's march. At the foot of the Grands Mulets is a small spring of water, the last supply that we were able to obtain, though this, indeed, could only have proceeded from the melting of the snow. It would be useless attempting to describe the beauty of the scene when evening drew near, and the rays of the setting sun rose by degrees to the very tops of the surrounding peaks, dyeing them with the most beautiful tints of purple, which faded by degrees into a most delicate pink, till the grey hue of night crept over the whole. The moon rose in great splendour, and I never shall forget the silent

impressiveness of the scene, uninterrupted except by the thunder of the avalanches that fell during the night from the sides of the great Pic du Midi into the valley below. I now turned into the tent—if so it may be called—and soon afterwards the guides crept in, and we packed together as well as we could, there being only room for two abreast. A small ledge of rough stones which we had raised was our security against rolling over the precipice, and I should have slept most comfortably had we not been so cramped for room that it was impossible for me to move my legs without kicking the head of the unfortunate man beyond me. As it was, the excitement of the undertaking, the anxiety for the result, and the novelty of the scene, combined to keep me awake for some time, and a strange variety of ideas crowded on my mind. It frequently occurred to me how little my friends in England could imagine the sort of resting-place I had chosen for myself that night; and I could not quite banish from my mind the possibility that I might never return to them again, though I did not suffer myself to dwell long on such thoughts as these. The night was not particularly cold, and at last I fell asleep.

At two o'clock next morning we were roused, and made hasty preparations for our departure. A few grey clouds were floating about, which the guides considered as rather a good sign. The thermometer was at 5° above freezing-point (Réaumur). I was dressed as on the preceding day, with the addition of a second shirt, cloth trousers instead of the light ones I had worn, a cotton night-cap under my straw hat, which was tied tightly under my chin, thick fur gloves and cloth gaiters, which were bound close round my feet with pack-thread. The temperature was exceedingly variable, as the wind blew along some of the valleys which we entered with great force and coldness; while in others we were sheltered from everything (later in the day) except the powerful rays of the sun, reflected as they were on all sides by the surrounding walls of snow. We left most of our baggage at the Mulets, taking only two knapsacks, which the guides carried by turns, containing some provisions, a telescope, and a thermometer. Our provisions consisted of chickens, bread, wine, some very acid lemonade, vinegar to sip 'au naturel,' chocolate, and dried plums, which are of great use in allaying thirst when kept in the mouth, as snow is not able to produce that effect; water would have congealed at this height. We also took some Eau-de-Cologne to relieve the acute headaches which generally attack persons at a great height, and from which I suffered afterwards considerably during the ascent. We scrambled down the Grands Mulets and reached the snow, where we fastened ourselves together by twos and threes with ropes round our waists. The four most experienced guides took it by turns to lead, which is the most fatiguing post, as the snow yields more or less to the foot, while we followed in the hardened footsteps of our leader. We set off at half-past two in silence, for we knew that all our powers and strength would be required before the day was over. The moment I had set my foot on the snow I felt that my respiration was, to a

certain degree, impeded—a sensation which afterwards increased most painfully. We set off, however, slowly, with the intention of reserving our strength as much as possible for the latter part of our ascent. The snow was hard and good, and the 'Ponts de Neige' over the crevasses were firm.

For above an hour we were working our way under an impending cliff of snow that looked every moment as if about to detach itself from the great mass and to fall on our heads. The crevasses here are numerous, but not so large as those above the Grand Plateau, which we reached after four hours' hard work. Generally speaking, only a small portion of the crevasses, that are not of great width, is visible; they are crusted over with frozen snow, and it is here that the utmost experience and skill are required in the guides. In crossing these we always carried our poles at a right angle with the supposed direction of the crevasse, and placed our feet softly on the snow before we leant forward the weight of our bodies. Some we crossed on our hands and knees, making ourselves as long as we possibly could. Over others we sent a guide well secured by ropes, who, when he had got over, sat down, with his heels and pole well planted in the snow, while we followed very *delicately* in his footsteps, holding the rope in our hands. I twice sank above my waist, and several times above my knees, in crossing these places during the descent when the snow was much softer. One of the men (Alexis, I think) sank rather deeper once, and fairly screamed with fright, but scrambled out again before we could even tighten the rope which was fastened round his waist. The Grand Plateau is a vast amphitheatre of snow, apparently surrounded on three sides by almost perpendicular heights, the fourth side being that by which we ascended.

Facing us was a small perpendicular line of bare rocks called 'Les Rochers Rouges,' near the foot of which lie deeply entombed in some crevasse the bodies of the three unfortunate men who perished in 1820. Here we halted for breakfast, but I had most completely lost my appetite, and it was with the greatest difficulty that I forced myself to eat the wing of a chicken and drink a little wine, as I was assured that if I took nothing I should not have strength to carry me up. I already felt very much fatigued. Having gladly finished my breakfast, in a few minutes we resumed our route, turning towards the left and traversing the broad plain of the Grand Plateau, till we entered a valley which soon shut it from our view. This road had been discovered by Couttet at the last ascent but one, being a longer, but less dangerous, route than the old one, which ascended on the right of the Rochers Rouges, and which had proved fatally so on a former occasion.

As we passed near the foot of these rocks Couttet pointed significantly, and said to me, in a low tone, 'Ils sont là.' It was a melancholy recollection, and all the guides seemed to feel deeply the loss of their ill-fated comrades, who will, in all probability, remain embedded beneath the Grand Plateau till the Day of Judgment. The most painful part of our journey had now commenced.

The heights we had to climb were generally steep, and it was necessary for the leader to cut steps in the snow with a small hatchet made for the purpose. The valleys were filled with enormous crevasses, which generally crossed them from side to side. The scenery was of that sublime nature that a man can have no idea of till he has seen it. I never conceived anything so splendid as the interior of some of the crevasses we passed. There were enormous grottos of brilliant ice, with vaults reaching farther than the eye could trace, containing every possible shape of stalactites in icicles of prodigious size. Some of the edges of the crevasses were worked, as if by the hand of man, in the most beautiful fret-work, with wonderful regularity. Their flooring, if I may so call it, seemed generally firm. As far as I could judge, the depth of many seemed between two or three hundred feet. I would have given anything to have descended into one, but it was utterly out of the question, as we had then no time to spare, and on our return the edges of the crevasses would have been too soft to bear our weight, in addition to which I should doubt exceedingly the guides having strength enough left to pull me up again. Indeed we had not a sufficient length of rope for such an attempt. The 'Ponts de Neige' were generally secure, with the exception of one, which we had some difficulty in passing, and which did not give us very pleasing anticipations for our return, when the little snow that was there would be half-melted by the midday sun. We passed it, however, and about two hours from the Grand Plateau we arrived at a wall of snow about two hundred feet in height, which we were obliged to climb, and which was very nearly perpendicular. My difficulty of breathing had greatly increased. I had violent shooting pains in my head, and my guides already felt the same symptoms, though in a lesser degree. We ascended in a zigzag direction, resting every ten minutes for two or three, and turning our faces downwards to breathe more freely whilst the leader was cutting steps in advance. In these short intervals I frequently fell asleep, while the steepness of the place was so great that I was forced to lean my head against the snow in order to preserve my balance. When I moved I did it almost mechanically. Both the asthmatic and headachy feelings were much relieved when I remained quiet, but instantly recommenced when in action again. Often did I wish that Mont Blanc had never existed; but the thought of giving up never occurred to me, and I kept my wishes to myself. My guides frequently offered to assist me by pulling at the rope round my waist, but I was anxious to do without it if possible, which, thanks to the strength of my constitution, I was enabled to do. I considered myself most fortunate in escaping the spitting of blood, giddiness, and sickness, which persons of weaker lungs often experience when at this height. In about an hour and a half we reached the Petits Mulets, almost the last points of bare rock which are visible on the mountain, when we rested for five or six minutes.

Another hour and a half of steep ascent brought us at last to the summit, on which I stepped without the slightest emotion of

pleasure. My ideas were confused, from my thorough exhaustion, and after stupidly gazing on the vast scene around me, I sat down on a knapsack and fell asleep with my head on my knees. After nearly ten minutes they woke me, and I found myself much refreshed. At the same time, I woke to a more perfect enjoyment of my new situation; that extreme exhaustion which had overpowered my mind as well as my body had passed away, and I was myself again. It is perfectly useless for me to attempt to describe what I saw. I can only say that it amply repaid me for all the dangers and fatigue I had undergone. France, Italy, Savoy, and Switzerland lay at my feet. The Lake of Geneva and Pays de Vaud seemed quite close; Mont Rose, Milan, the neighbourhood of Genoa (the town is hidden by the heights beyond which it is built). On the N., far beyond the Jura, I saw what may have been Dijon, as it has been before seen, and the weather was perfectly clear. The Valley of Chamouni lay under our feet, with the Arve running through it like a thread of silver, and the innumerable peaks of the Alps, all looking like pigmies compared with the giant on which I was standing. My excessive fatigue caused me to forget two or three things I wished to have done, such as looking for the stars with a telescope, some of which, I believe, may be seen. I could not, certainly, distinguish them with the naked eye. I forgot, too, to fire a pistol to hear (if I may say so) it make no noise. I did fire it, high up, for an echo, and it produced a much weaker report. The sky was an extraordinarily dark blue, almost black. I did not feel that lightness in treading which is often experienced at that height. I lost all appetite and thirst in ascending, but the latter was very great afterwards. The thermometer was at zero. The summit appeared to me to be about 120 feet long by 50, of an oval shape, with the corner towards the N.W. considerably raised. The shape of the surface, consisting entirely of snow, and subject to great vicissitudes of weather, must be perpetually liable to change. I may here remark that the upper layers of the snow on the mountain are unlike that which falls on the lower regions, being composed of separate globules, unconnected with each other, except by the cohesion of frost. We remained on the summit only 25 min., the longest halt during the day, as we were anxious to avoid passing a second night on the mountain. My feelings were very different when we began to descend, from the perfect apathy and indifference with which I had arrived at the top. The triumph of having succeeded in our attempt, the excitement of the guides, as well as of myself, and the ease in descending compared with the fatigue we had previously felt, raised our spirits to the highest pitch, and we set off with shouts of joy.

At a very short distance from the summit a butterfly flew past us. We had neither the power nor the inclination to catch it. Near the top of the Faido, a high mountain by the Pass of St. Gothard, I found part of a swarm of bees lying on the snow, most of them frozen, but some still alive. In ascending, the snow was hard and good, but by mid-day the

sun had softened it, and in most places we trod knee-deep, which was fatiguing and dangerous, as the 'Ponts de Neige' over the crevasses were insecure. The glissades were very amusing. Down an angle of 45° , for instance, we slid down on our heels, with the poles behind us in the snow, like a third leg. This requires great practice, and at first I never went more than a few yards without falling, which is an excellent joke in soft snow. At the steeper places we fairly sat down, and with our poles in the snow behind to guide us, lifted up our heels, and away we went like lightning. We had some excellent races in this manner, and I enjoyed it very much. Small crevasses are passed in this way without danger, as the rapidity with which we went prevented our sinking. The excitement of the whole was so great that I can affirm, without any idea of boasting, that I did not, during the whole time, feel the least degree of fear or even nervousness, though I have frequently since shuddered at the remembrance of some of the places we passed. Once, in the beginning, as I looked down on a steep place from a narrow path, I fancied that I saw the rocks and valley moving slowly along; but I immediately stood still, and looked steadily at them, and I never felt giddy afterwards.

Our greatest difficulties at this period of the journey were at that exceedingly steep place I noticed in the ascent, which required the greatest caution, and took us more time in descending than we had been in ascending it. No one, however, made even a false step here. The crevasse, which I have before particularly alluded to, was crossed after many precautions, and without accident. In all probability a week more must have melted away the little Pont that remained, and left the valley perfectly impassable. Had we been unable to cross this on our return, we must either have remained on the mountain—and, it is needless to add, have perished—or retraced our steps to near the summit, and descended by the dangerous pass of the Rochers Rouges. I do not think, however, that we should have had strength to reascend, especially as the snow was so soft, and we should soon have been overtaken by night and—as the next day proved—a storm. I was not aware of the extent of our danger till we had passed it, when I need not say how grateful we all felt for our deliverance. The coolness and intrepidity of my guides are beyond all praise. In descending I did not feel the slightest difficulty in breathing, and the pains in my head gradually decreased. In some places the wind was high, and the light snow drifted along in sheets when disturbed by our footsteps. On our return to the Grands Mulets, in three hours and a half, we packed up the baggage we had left there, which, like Æsop's load, had been considerably lightened, and arrived on the glacier, when we halted a few minutes to feed. It was exceedingly hot, and I never suffered so much from thirst as then, which nothing would quench, and which I did not get rid of till I put myself into a hot bath on my return to Chamouni.

At the foot of the mountain I found a mule waiting for me, and

we returned to Chamouni about half-past eight, having been half the time descending that was occupied by the ascent. Though at so late an hour, I found crowds of people waiting to receive me in triumph, as they could, with telescopes, from Chamouni distinctly trace our progress. I did not feel much tired, and was too feverish to sleep well; but the next morning I felt exceedingly stiff, and was not sorry to remain quiet during most of the day. My face was much swelled, and the skin turned black and wrinkled, but after a few days peeled off, and left me fairer than I had ever been since the days of babyhood. My eyes scarcely suffered, and that only for a day or two. Had I not worn green spectacles I firmly believe I should have been blinded, for nothing can give an idea of the dazzling brilliancy of the snow above, when I now and then for a moment took them off. Two of my guides, who had only worn green veils over their faces, could scarcely see for a day or two after their descent. It was amusing to see what a lion I became at Chamouni during the two days I remained there afterwards. The place was crowded with visitors, and some asked me the most absurd questions imaginable. I cannot pass over in silence the exceedingly liberal conduct of my host, who, though I was a perfect stranger to him, offered to lend me all the money requisite to pay my guides and other expenses, without even asking for any security, as having had no previous intention of ascending Mont Blanc, I had not brought enough with me for that purpose. I, however, preferred taking one of the guides with me on my return to Geneva.

The reasonable charges and great attentions of my host induce me to recommend him most strongly to those who visit Chamouni. With regard to this expedition, I cannot do better than repeat Couttet's own words when I first applied for assistance: 'If you succeed you will think nothing of the fatigue and expense, but if you are compelled by weather, or any other circumstance, to abandon it, you will be exceedingly sorry that the idea ever entered your head.' In conclusion, I should most earnestly advise no one to attempt the ascent of Mont Blanc, for, though I found myself amply repaid by my success for all my fatigue and trouble, the chances are very great indeed against anyone's having again a journey so prosperous in weather and every other respect as mine was. To anyone who does not care for a night's rough lodging, I strongly recommend to go to the Grands Mulets, which he may easily do with two or three guides at a trifling expense. He will then see enough to give him an idea, though an imperfect one, of the awful scenery which is only to be found above. He will have a splendid view during daylight, and, if he times his visit well, a glorious sunset and moonlight afterwards—at all events, plenty of avalanches during the whole of his stay there. He will experience little danger or fatigue, and, moreover, he will have the distinction of being the first man who ever *willingly* halted at the Grands Mulets, without the intention of proceeding farther.

THE CAUCASUS IN 1896.

BY VITTORIO SELLA.

SIGNOR V. SELLA sends the following detailed notes of his recent journey in the Caucasus, the third he has undertaken.

Signori Vittorio Sella and Emilio Gallo, with two young servants from Biella, left Kadgaron on July 15 for the Fiagdon valley. They reached Dalakaff, the most populous village, in the evening. Below Guli, in the limestone region, they met with a fine defile; the valley above is uninteresting and entirely bare of trees. Kolota, 7,800 ft. by barometer (from L. Casella, London), consists of two or three houses, surrounded by grass slopes, and inhabited only during the summer. From Zuikoi Khokh (black schists), about 12,000 ft., a good view of Tepli was obtained.

Ascent of Tepli.—The north-east ridge was considered the most practicable, the glacier above Kolota leading to a considerable height on it. In a first attempt they reached a saddle (12,600 ft.) above the glacier, but bad weather prevented further progress. On July 28, by climbing rocks at the head of the glacier, they gained the ridge of the mountain. The snow was in bad condition, and huge cornices on the N. obliged them to keep considerably on the opposite side of the ridge. The rocks on the ridge were not difficult. They reached the central summit (14,460 ft.) at 12.30, in seven hours from a camp (10,000 ft.), on the left moraine of the glacier above Kolota. They built a cairn and took photographs. A further point appeared to be a few feet higher and very difficult of access.

Leaving Kolota the party crossed a pass (11,060 ft.) to Zakka, with two donkeys and a horse, in five hours. The Zakki valley is arid, vegetation scarce, the roads ruinous and at many points difficult for horses. The route became more interesting, at the opening of the Ginat and Zrug valleys, where they fell into Mr. Freshfield's 1868 track; thence Zikara is a beautiful peak. Nar and Espe are villages particularly characteristic of Ossetia. By the Mamison road they reached St. Nikolai, and ascending the Zea valley camped behind the moraine of the glacier, after climbing to 10,000 ft. to reconnoitre towards the Songuta. Here they were informed by the interpreter that the baggage deposited at St. Nikolai had been stolen. Leaving the camp they went down at once. The chief of the district was informed and made inquiries. To their astonishment the stolen effects were returned. They were mysteriously replaced near the door outside the house in good condition. The fact that they consisted of films and other objects of no value to the thief possibly explained their restitution. A spool of film exposed had been opened, and the stereoscopic work done in the Zakki valley destroyed.

From Sadon they crossed into and went up the Songuta valley, camping near the foot of the glacier in bad weather. While shooting with a native hunter S. Sella was fortunate enough to

bag a fine tur. The ice-fall of the Songuta Glacier is very beautiful, not less than 2,000 ft. in height, and recalled that of the Karagom. The peaks at the head of it are steep and difficult, and very beautiful in shape, forming an imposing amphitheatre. After two excursions on the tributary glaciers which flow in from the E., they undertook the ascent of the peak rising at the head of the western arm of the glacier, which dominates the adjacent valley of Skatikom. Their first object was to observe from it in what way the ridge of Adai Khokh unites with the head of the Songuta basin.

Ascent of Skatikom Khokh.—The party ascended the ice-fall, keeping to the right side, following steep snow-slopes and crossing some huge séracs. Then they gained the rocks, and easily climbed to the top (14,200 ft.) in seven hours from the camp (8,500 ft.). Adai Khokh at first seemed invisible, but after careful observation with a large Zeiss binocular stereo-telescope * they discovered that Adai Khokh was almost completely masked by a peak at the head of the Songuta Glacier, to which the figures 14,600 are appended in Mr. Freshfield's map of the Adai Khokh group, 'A. J.,' vol. xvi. p. 81.

Having left the Songuta valley they travelled towards the north side of the unexplored Bogkhobashi group. The way to it follows the Uruk River to the junction of the great affluent from Stir-Digor, crosses it over a bridge, ascends to Donifars (erroneously placed on the right bank of the river in Freshfield's map), then passing near Kumbuitui ascends to the Burovsek (pass, 10,700 ft.), descends into the Khuiznui valley, and by another pass not much lower crosses to the Sukan valley. On the Burovsek they found many fossil shells. This journey occupied nearly four days. Donifars is a large and Kumbuitui a smaller village. They are surrounded by slopes entirely bare of trees. In the two above-named valleys are no villages and only a few koshes. Vegetation is scanty, in Khuiznui much more so than in Sukan. The landscape, however, does not give the impression of wildness. The vivid warm colours of the abrupt calcareous peaks on the N. of the passes call to mind the Tyrolese Dolomites.

From a camp behind the left moraine of the eastern Sukan Glacier, near some poor bushes of rhododendron, they climbed to the summit of the ridge between the Sukan and Ptsyvachki valleys (11,000 ft.). Thence they observed that the best way to climb Sukan is probably by the western glacier and the northern ridge. They ascended to 10,500 ft. on the western slope of Mount Tuyala, which gives a magnificent view of the Sukan range. The weather was windy, and not favourable for several days.

Ascent of Sukan.—On August 21 they left camp at 11 p.m. by moonlight. The ice-fall took nearly 2 hours at dawn. Higher up they got on quickly. Above the bergschrund they kept to the rocks, which were frightfully rotten and steep. On a saddle (14,500 ft.) they left the large camera behind. Ice-slopes and difficult rocks alternated to the northern top, which they reached

* 'I strongly recommend this binocular glass to mountain explorers.'—V. S.

at 11.10 A.M. They did not visit the highest snowy southern summit. They built a cairn on the rocks of the northern peak (14,800 ft.).

In three days' travel they crossed from Sugan to Chegem. At Bezingi they learnt that the well-known tall chieftain had died two years ago. They visited the Jilkisu, a curious and interesting limestone valley, with a narrow and imposing defile. They climbed Kom (12,874 ft.); it commands a splendid panorama, of which photographs were obtained. From the kosh behind the moraine of the Bashilsu Glacier they crossed to the Leksur Glacier. It may be remembered that Mr. Mummery got into great difficulty in crossing the chain near this point. This (the Bashil) pass is not habitually used by the natives of Chegem, although its existence has been mentioned to many travellers, including Mr. A. W. Moore. A Chegem hunter who served as porter pointed out to S. Sella the native pass. It is a narrow gap to the N.W. (right in ascending) of the broader depression at the head of the Bashilsu Glacier. The final climb, which is short, is up a gully exposed to falling stones. The descent soon joins the route of the Mestia Pass.

From Mestia they climbed to an eminence of 11,000 ft. on the Gul Ridge, and observed Ushba with the binocular stereo-telescope. One point only on the south-eastern ridge of the mountain appeared to S. Sella very difficult. He believes that by passing the night at a great height it would be possible to overcome it and ascend the mountain entirely by rocks. He considers that to good rock-climbers this route will furnish the safest way to the south peak of Ushba.

Owing to the many delays from the bad weather he had experienced he was unable himself to stop for any attempt. By the Tuiber Pass the party returned to Chegem with a horse, and two natives of Mujal. Many photographs were taken; two turs (bouquetins) and a few birds and several marmots and vipers were collected.

THE BIETSCHHORN FROM THE BIETSCHTHAL BY THE SOUTHERN FACE.

By J. P. FARRAR.

THE first ascent from this side was made on September 2, 1884, by Drs. E. and O. Zsigmondy, Herr Purtscheller, and Professor Schulz—cf. 'Im Hochgebirge' (p. 305), a reprint of various articles by Emil Zsigmondy: the Bietschhorn paper is, however, by Professor Schulz, reprinted from S. A. C. 'Jahrbuch,' xx., 60–102.

The entry in the Ried 'Fremdenbuch'—apparently written immediately after the ascent—reads as follows:—

'Anfangs durch das am meisten rechts gelegene tief eingeschnittene Couloir, dann aus diesem links, über eine sehr schwierige, steile Felsmauer, auf die zwei Couloirs trennende Felsrippe, dann

an den östlichen Wänden des weiter links gelegenen breiten Couloirs und über den mittleren zum Schneegipfel leitenden Felsgrat. Ab Bivouak 3.30 (ca. 2660 mtr.). Einstieg Felsen 5.10. Auf Gipfel an 3.55. Rast beim Aufstieg, 1 Stunde.'

Translation.—'At first through the deep-cut couloir lying furthest to the right [E.], then out of this to the left [W.], up a very difficult steep rock wall, on to the rocky rib dividing two couloirs, then on the E. walls (or slopes) of the broad couloir lying further to the left [W.], and by the central rock ridge leading to the snow summit. Left bivouac (about 2,660 m.) 3.30. Took to rocks 5.10. Arrived summit 3.55 P.M. Halts on way, 1 hr.'

In short, they crossed the right hand (*i.e.* E.) gully or couloir, ascended its left hand or W. wall to the crest of the rock rib dividing it from the broad couloir next to the left [W.], traversed along the face of this rib overlooking the W. couloir, regained the crest of the rib, and so to the summit.

I will endeavour to extract the chief points from Professor Schulz's very interesting article mentioned above:—

According to this they left their bivouac (under a rock at the head of the Bietschthal, excellently reproduced in Mr. Compton's picture,* and which when we passed nine years later was as perfect as though it had been just made) at 3.30 A.M. on September 2, 1884, reached the glacier lying at the base of the S. face of the mountain, took to the rocks [at its E. corner] at 5.20, and climbed to the right hand, or main S. (strictly speaking, S.E.) ridge, which connects the Bietschhorn and the Thieregghorn. They then traversed to the left along rock ledges—how far not stated—ascended for 10 min. to the right till half-way up the W. slope of the main S.E. ridge, the height being below the junction of the E. ridge coming from the Stockhorn (cf. Siegfried).

The author then distinguishes two gullies or couloirs.

(a) His E. couloir, a long narrow gully leading up to near the summit, and lying close to the S.E. ridge referred to above. Up this couloir his attempt with Burgener (cf. S. A. C. 'Jahrbuch,' xix.) in 1888 was made. He considers the map (Siegfried) does not show this gully.

(b) His W. couloir, a very broad deep cut couloir lying more to the left and leading direct to the summit, its lower end being to the right of point 3,058 (Siegfried).

By the rock ridge dividing these couloirs, or rather by the W. slope of this ridge, lay their route to the summit.

The Professor states (p. 312) that the W. couloir or the snow-field filling its lower end is connected with the glacier at base of S. face by a gully, but I do not reconcile this with p. 311, where both couloirs are stated to be cut off from the glacier by precipitous rocks (see below).

Their chief difficulty consisted in reaching the crest of the rock

* See *Im Hochgebirge*, p. 309.

ridge between the two couloirs, and in turning the towers on the ridge.

From the W. slope of the main S.E. ridge, *i.e.* the right-hand wall of the E. couloir, the party apparently crossed this couloir to the rocks on its other side, and then recrossed higher up to the entrance of the very narrow upper portion of the couloir (see p. 313) Even with local knowledge I find it difficult to grasp very readily the author's interesting narrative at this point). They climbed into this narrow portion and out of it on the E. slope (*i.e.* to the W.) of the rock ridge dividing the two couloirs above referred to (8 A.M., 3,520 m.).

From this point the main S.E. ridge and the almost parallel ridge on the E. slope of which they stood were seen to be crowned with grotesque towers and deep notches. Emil and Purtscheller ascended to a notch in this ridge, looking into the W. couloir, but decided to continue traversing along the E. slope of the ridge. This they did for 25 min.; in fact, were again so close to the E. couloir as to be driven by falling stones to regain the crest of the ridge between the couloirs by a difficult rock wall 75 ft. high, splendidly climbed by Purtscheller (10.15 A.M., 3,610 m.); see illustration in 'Hochgebirge,' p. 316. They turned the next tower on the ridge on its left side, but were not able to descend into the W. couloir, although the Professor states they were above the black pitch or cliff in the couloir. They continued to follow the ridge, now snow, and reached (12.5 P.M. 3,660 m.) after some difficult climbing, and traversing another gap in the ridge from which the way to the summit seemed clear, the only difficulty appearing to be a frozen waterfall* at the head of the W. couloir. They again traversed the W. face of the ridge to just above a small rock tower set in this face (1.5 P.M. 3,720 m.), and saw that above the frozen waterfall† the W. couloir branched into two arms, down which snow, ice, and stones fell. The ridge bore away E., forming a bay, and continuing their traverse they were able to turn the frozen waterfall after again nearly climbing to the crest of the ridge (2.30 P.M.). They then bore away to the left to reach the floor of the now narrow W. couloir above the waterfall (3.6 P.M., 3,860 m.), whence the summit was reached at 3.55 P.M.

Second Ascent.—Daniel Maquignaz and I bivouacked on September 14, 1893, on a green plot under the lee of a big rock (4 to 4½ hrs. from Raron, about at the source of the most E. branch of the stream flowing down the Bietschthal). It is about ½ hr. below Zsigmondy's *gite*, and offers no shelter against rain; but in fine weather is preferable, as water is closer.

The key of the ascent by the S. face is a broad snow-filled couloir, descending straight down from the summit to the glacier at the foot of S. face, but cut off by a cliff at its lower end, and hence this couloir has to be gained by a series of traverses. Pos-

* I only saw the upper cliff or waterfall in this couloir—not two.

† Compare also *Ueber Eis und Schnee*, second edition, vol. i. pp. 335–338.

sibly early in the season avalanche snow might be found banked up against the cliffs, rendering direct access to the big couloir possible. This is the Professor's W. couloir; but it will be seen below that I distinguish more couloirs than he does. My notes were very carefully made on the spot, so as to help to elucidate the very complicated *terrain* of this S. face. I am inclined to think—if such a degree of accuracy can be expected from any map—that this W. couloir is the *second* from the S.E. ridge, and not, as the Professor considers, that immediately W. of the S.E. ridge, as shown on the Siegfried map. This latter, in my opinion, represents the Professor's E. couloir, and the others mentioned in my notes.

Stones fall down the W. couloir, and I by no means wish to imply that it could be safely followed its whole length, or that it would be safer than the series of traverses we made to gain it.

On September 15, from our bivouac, we ascended over moraine, passing Zsigmondy's *gite*, to the strip of glacier at the foot of the S. face (1 hr. 20 min.). In ignorance of the details of Zsigmondy's route, we spent $1\frac{1}{2}$ hr. in examining the cliffs which bar direct access to the S. face, and attempting to find a passage. We finally returned to the N.E. corner of the glacier, whence a convenient, though from a distance formidable-looking, ledge led (in 20 min.) to the main S. arête, looking 'in der Trift' (Siegfried).

From the arête we traversed back to the left (N.W.), along convenient ledges ascending only slightly, and then descended a short wall into a big, broad couloir (No. 1)—hard snow (40 min.). In this, we mounted straight up for 20 yards, then cut across it, and followed the well-defined ridge on its left, or W., side till the ridge flattens out (25 min.). Then we crossed the head of a small couloir (No. 2) to the W. of the ridge, took to the rocks on the other (W.) side of this small couloir, always traversing to the left, and climbed to the crest of these rocks (12 min.), beyond which is a big couloir (No. 3), cut off above by a black waterfall.

This couloir is crossed horizontally to a flat rock on its other side, forming a convenient platform. From here the way lies straight up a steep crack, and the couloir (No. 3) is regained by a traverse, not easy (53 min.). This couloir is at once quitted by mounting its left (W.) wall, from the crest of which a descent of 40 ft. leads at last into the great snow-filled W. couloir (No. 4) (35 min.).

You skirt the E., or right hand, edge of this couloir close to, or partly on, its bounding wall, the steep rocks of which offer good hold, until you are above a narrow island of rock contained in the couloir (40 min.). The couloir is blocked by a characteristic black cliff, with the usual waterfall (cf. Schulz). To circumvent this we climbed the very steep rock wall forming the E. bank of the couloir, bearing away to our right to gain, just above a big-pointed tooth, the main S.E. ridge overlooking the Baltschieder Glacier (55 min.). From this point we traversed back to the left (N.W.), below the crest of the main ridge on the Bietschthal side (difficult), re-entered

the W. couloir, now quite narrow, immediately above the black cliff and waterfall, crossed the couloir where it forks about 30 yards above the fall, and mounted the rocks between the forks (30 min.), and so regained the ridge overlooking Baltschieder (10 m.), which is then followed to the first, or S., summit (12 min.), and to the final summit (4 min.).

	Hrs.	Min.
Actual climbing time from bivouac	6	56
Time spent examining cliffs	1	45
Halts	0	55
Total	9	36

The ascent was made on a quiet September day; the rocks are sound, very superior to the W. arête, and there was a little snow in the couloirs. A big stone ploughed down the big W. couloir (No. 4) as we sat looking into it, otherwise we saw no falling stones.

Against my experience must be set that of the Purtscheller-Zsigmondy-Schulz party, who were constantly endangered by stones, as were also Professor Schulz and Burgener on their attempt in 1888. In 1895 an attempt, with Maquignaz as leader, was also abandoned early in the day, for the same reason.

The continual traversing requires care; the climbs to outflank the black cliffs and waterfalls alone would be called difficult in a moderate degree. It will be noticed that we spent but a very few moments in the couloirs themselves, where we could be exposed to stones, and on the intermediate ridges one was safe enough.

The Austrian party appears to have encountered difficulties, due, I think, in a measure to that admirable determination they so often exhibited—not least in their famous first traverse of the Meije arête—and which in this case led them to persist in a too direct attack. We contented ourselves with outflanking the difficulties, and met with none that would have at all taxed the powers of a Zsigmondy or a Purtscheller. Thus we were enabled to considerably shorten the time without undue exertion, and hence minimise any risk.

Daniel Maquignaz led all day with tireless energy, a *bonhomie* that neither hardship nor danger ever ruffles, and that incomparable 'flair' of the great guide.

P.S.—The starting-point is Raron, a station in the Rhône Valley, where there is a decent inn, kept by Herr Schröter, where good provisions can be had very reasonably. Porters can be obtained there (in 1893 the local shoemaker acted for me).

As to bivouacs, the Gîte Zsigmondy 'im Rami,' in the Bietschthal, is under an overhanging rock, open only to the S., and has room for four or five people. It is quite dry. It is about the middle of the valley, and is a bit hard to find among the surrounding similar 'Geröll.' It is about 5 hrs. from Raron, and about 1 hr. below the glacier. Our bivouac is only suitable for quite fine weather.

ALPINE NOTES.

GIFT TO THE ALPINE CLUB.—Mr. Heelis has presented to the Club a picture of Gaurisankar and Makalu, by Mr. Alexander Scott.

THE NEW EDITION OF MR. BALL'S 'ALPINE GUIDE.'—We would remind our readers that Mr. Coolidge will be very glad to receive notices of any alterations as regards inns, roads, paths, Club huts, &c., which may take place this summer. All communications should be addressed to Mr. Coolidge, *after* October 15, at the Bear Hôtel, Grindelwald. The first volume has gone to the printers.

ALPINE ACCIDENTS.—As usual a number of accidents are reported, chiefly from the eastern portion of the Alpine region. Two young Swiss who foolishly attempted the Schreckhorn without guides fell some 1,500 ft. through cutting inadequate steps on an ice-slope. They were fortunate enough to escape with their lives and three broken legs. M. Goudet, a Swiss engineer, has died from the effects of a fall while climbing with Herr T. Keidel, Vice-President of the Austrian Alpine Club, on the Buchstein, near St. Gall.

It is, as Mr. E. Whymper has shown in his recent letter to the 'Times,' impossible in the lack of evidence to form any decided opinion whether the recent disappearance of an elderly Englishman near Zermatt was the result of physical collapse, or of an accidental fall, or of a crime. To those acquainted with the circumstances none of these hypotheses can seem inadmissible. It is a misfortune for the inhabitants of Canton Valais that past experience gives travellers but little confidence in any investigation conducted by the local authorities.

'LE ALPI ILLUSTRATE.'—We have received a specimen number of this attractive collection of Alpine photographs (photogravures), which is published with the approval of the Italian Alpine Club. It appears in twelve monthly parts, each containing five illustrations, at a very moderate price. The publisher is Sig. Antonio Fusetti, 8 Via Pasquirolo, Milan. We hope to notice this collection more fully when it has been completed.

MONTE DI SCERSCEN AND PIZ ROSEG.—We have received the following from Captain L. S. Blackden :—

'In the November '96 number of the "Alpine Journal"—"In Memoriam, Roman Imboden, by Mrs. Main"—there is a statement to the effect that the "Monte di Scerscen" has not been climbed since 1894.

'On Tuesday, 24th September, 1895, I left the "Capanna Marinelli," with Martin Schocher and Bartholomew Wohlwend, at 8.50 A.M., and reached the summit of the Monte di Scerscen at 8.35 A.M.

'We returned by the Scerscen Grat and Piz Bernina, reaching the latter summit at 12.10 P.M. and the Boval Hut at 4.15 P.M. An entry will be found in the book at the Boval Hut to the above effect.

'I might add that, although the ascent of a proverbially "stoney" mountain was made in the September of an exceptionally stoney year, we saw no stones fall, except those we sent down ourselves, until some time after we had reached the summit.

'I do not know if the following "variation" is at all rare; I do not believe it is new. On Friday, 20th September, 1895, with the guides Schocher and Wohlwend as above, on the descent from Piz Roseg, we reached point "3,599" at 12 noon, and turning north descended by a rock arête on to the Tschierva Glacier, the bergschrund of which was crossed at 1.45. We followed the ridge to near where contour 3,860 crosses it, and then turning east descended direct on to the glacier. There is one difficult piece on the ridge, when the last man requires the assistance of the rope, and the whole of it affords fine climbing.'

LA CHANOUSIA.—We learn from the June 'Rivista Mensile' of the C.A.I. that the Alpine Garden on the Little St. Bernard will be shortly inaugurated. It takes its name from the rector of the Hospice, the Abbé Chanoux. The secretary is Sig. L. G. Bonelli. The chief object of the garden, the work of which is undertaken under the auspices of the Turin section of the C.A.I., is to prevent the extermination of the rarer Alpine plants. We wish it all success.

DESCENTS OF YORKSHIRE POT HOLES. LONG KIN HOLE AND ROWTON POT.—The sport of cave-hunting and the exploration of pot-holes, which received so great a stimulus two years ago by the plucky descent of Gaping Ghyll by Monsieur E. A. Martel, has since been carried on with considerable vigour by various members of 'the Yorkshire Ramblers' Club.' The two principal successes scored this year are the descent of Long Kin Hole, on Ingleborough, and of Rowton Pot, near Ingleton. The former at the top is a mere long and narrow crevasse on a limestone plateau, here and there bridged over, and only about 2 ft. 6 in. to 5 ft. wide, a gruesome hole which is 925 ft. deep. This was explored on May 15 and 16 by Mr. Edward Calvert, the leader, who reached the lowest and blackest depths; Mr. Firth, who descended all but the last pitch, and who would have done that but for want of time; and Messrs. Ellet, Green, Slingsby, and Mason, whose ambition was conveniently tempered by an indulgence in the belief that, on this occasion at least, there was truth in the adage that 'discretion is the better part of valour.' Rowton Pot—a dirty pot too, in spite of its constant washing by a stream of water—also afforded much sport, and was descended on July 4 by Messrs. Booth, Swithenbank, Cuttriss, and Scriven, assisted by Woodhouse and Somers. It is 365 ft. deep. Both pots had been previously reconnoitred, and their descents attempted by some of those who ultimately succeeded in reaching their innermost recesses. Rope ladders were used in both cases, and each expedition afforded many and very various adventures, which will give ample materials for a most sporting paper. For the present I will merely say that the descent of a pot such as Long Kin Hole by rope ladders, where there are only three

ledges and four pitches, demands at least as much good generalship, and requires at least as much pluck, strength, and powers of endurance on the part of the leader, as the ascent of a fashionable Zermatt peak.

WM. CECIL SLINGSBY.

WILDSTRUBEL.—On March 22, 1897, with Jean Maître and a porter, Mr. O. K. Williamson ascended the Wildstrubel from the Hôtel du Parc, Montana. Starting at 8.30 A.M. the summit (of the W. peak) was not reached until 1.45 P.M., owing to the softness of the snow for a great part of the distance. The hotel was not regained until 9.30 P.M. The weather was brilliant, but exceedingly warm, and the views beautiful.

THE COMMISSION INTERNATIONALE DES GLACIERS.—This body, the appointment of which was to some extent a result of the steps taken by our own Committee to promote the study of glacial movements throughout the globe, is active in its task. Messieurs Forel and Pasquier continue their annual reports on the Alpine glaciers, the majority of which are showing a tendency to retreat, which yearly grows more accentuated. M. Rabot has published a tract on 'The Variations in Length of the Arctic and Northern Glaciers' (Georg, Geneva, 1897).

CAUCASIAN GLACIERS.—Mr. Douglas Freshfield, who has recently been appointed the English member of the Commission above mentioned, writes as follows:—'I find in the Report for 1895 (p. 139) an allusion to the glaciers of the Caucasus, to which I may perhaps usefully add some further general statements. The evidence as to the oscillations of Caucasian glaciers is still necessarily very defective. Only one glacier in the chain—that of Devdorak, on the N.E. slope of Kasbek—has been studied with any continuity, and that on account of the practical effect produced by the outbursts of water and ice blocks (improperly called avalanches), which, originating in it, have from time to time destroyed or injured the highroad of the Dariel Pass.

'The material at present at the disposal of students is limited to a few measurements made by the Russian surveyors and M. de Déchy in the central group or at the sources of the Baksan, to the notes of Alpine climbers, and the numerous photographs taken by them of late years.

'My own personal notes have this exceptional value, that they are severed by a distance of twenty years (1868 and 1887 to 1889). I can state without hesitation that the main tendency of the ice during this period has been one of retreat, and that this retreat has been very general and considerable. The best positive proof I can show of this is the contrast between some photographs taken by a member of Count Levaschoff's military expedition to Suanetia in 1869 and photographs by M. de Déchy (*circa* 1885), which show the lower end of the Zanner Glacier. At the time, however, of my two last visits (1887 and 1889) a new movement was commencing; it had not, I think, reached the front of the glaciers, but was made manifest in their central portion by the casting of fresh rubbish over the green moraines. I need not trouble the reader with the numerous

observations on which I ground my conclusion, but I am convinced that a fresh advance of the ice was in progress in 1887-1889. How far that advance has been continued I do not possess sufficient materials for judging.

'It is much to be desired that the Russian Government or scientific societies should arrange for the periodical measurement of several of the principal ice streams on either side of the chain. The Azau Glacier, the Bezingi and Shikildi Glaciers, the Karagom Glacier on the N., the Chalaat, Leksur, and Adish Glaciers on the S. would be good examples. Failing this, successive travellers should measure and report on these or any other conspicuous glaciers, and use their personal influence to induce the Priestav of Betsho, and the princes of Urusbieh, or the Načhálnik at Naltshik to take up the work. M. Jukoff did what he could while engaged on the Survey (see "The Exploration of the Caucasus in 1890," in R.G.S. "Proceedings," 1892), but he was naturally removed after one or two seasons to another part of the country.'

CORRESPONDENCE.

THE NEW ZEALAND ALPS.

To the Editor of the ALPINE JOURNAL.

Thames: March 27, 1897.

DEAR SIR, — May I, as spokesman of the N.Z. Alpine men, express my appreciation of Mr. Freshfield's very able summing up of the points at issue between Mr. FitzGerald and myself?

We young colonists are very touchy when anything is said which may tend to depreciate our hard work, and imagined our past labours in opening up our Alps were being overlooked when, perhaps, there was really no cause for protest.

I thoroughly endorse the concluding remarks of the article, and can only again express, as already testified in Mannering's and my letters, our congratulations and admiration of Mr. FitzGerald's climbs out here with his guide.

I should be glad if you could find space for this note, as evidence that we accept Mr. Freshfield's verdict and thank him for his very exhaustive and interesting summing up of the whole subject.

I am, Sir, yours faithfully,

ARTHUR P. HARPER.

THE SUMMER EXHIBITION.

AMONG the smaller picture galleries of London it would be difficult to find one superior to that belonging to the Alpine Club. Admirably lighted, most suitably decorated, and situated within a few hundred yards of the chief exhibition rooms of London, it might reasonably have been expected that its walls would be

eagerly sought by the exhibitor, and that the gallery would be a favourite resort for the picture lover. A former reviewer looked forward to the periodical exhibitions in which the works of the artist members were to be brought to the notice of the climber, and prophesied the baneful influence which this was to exercise on Alpine art. Experience has shown that his anxiety was uncalled for; artist and climber have remained rigidly apart. Each succeeding exhibition has shown a falling-off in the number of visitors, until a dozen people in the day, and those largely recruited by private invitation, are regarded as an unusually good attendance, while the absence from this exhibition of many, if not all, of the artist members would seem to argue that the gallery was equally out of favour with the contributor. Surely this should not be so.

A good exhibition depends on eager, or, at least, willing contributors, but no one is likely to be eager to send works to a gallery in which they will be seen by none save the caretaker. It is a vicious circle, but it can be broken through if visitors are attracted. Means might surely be devised by which the exhibition should be made more widely known, and by which, without breaking through the essentially private character of the Club, there might be an appeal to a larger public. By holding the photographic exhibition in the duller months, and reserving the brighter spring days for paintings and drawings, the committee has taken a step in the right direction. Is there any reason why the custom of opening the exhibitions with a private view should not be resumed? It was departed from this summer with results which are not encouraging, and it might be well, indeed, to make the opening day still more important. Experience has shown that the words 'afternoon tea' on an invitation card do not diminish the attractions of an exhibition, as may be seen in many a Bond Street gallery. Little, however, can be done if the Club halt between two opinions, and, heedless of the change of policy involved in the change of quarters, regard a larger publicity with suspicion; or if it do not interest itself in this matter, and purge itself from the accusation brought against its members in a former review, that they care for none of these things, and that pictures of hills are, to them, uninteresting—'unless they can identify the crack up which they wriggled or the chimney in which they cut steps.'

The scanty attendance could not be attributed to the weakness of the exhibition in the present instance, for though small and lacking in works of many well-known members, it was of great interest if only for the opportunity it afforded for comparing the works of two artists such as Loppé and Albert Gos, who have devoted themselves to the rendering of mountain landscape.

The work of Mons. Loppé is well known to all members of the Alpine Club, and this exhibition gave once more an opportunity to note the extraordinary truthfulness of his rendering of outdoor light, and the subtle differentiation between the brilliant light of the summer and winter sun. This brilliancy of lighting is, too, obtained with no exaggeration of contrasts, no darkening of skies to

give value to peaks, and is as apparent in the veiled and mist-filtered sunlight of the 'View from Prarion' and the view of the Argentière Glacier as in the full glare of the 'Chamonix in Winter.' This last is excellent in its realisation of winter sunlight, and charming in its grey tones. A sunset from the Grands Mulets and a delicate rendering of evening light on the Breithorn were also noticeable, while a view of Grindelwald recalled a sketch by Bonington seen in a former exhibition.

To M. Gos the Club is much indebted for his numerous and interesting contributions, but it is to be feared that his enterprise has hardly met with the success which it deserved. At the Academy was hung what was perhaps his most important picture, 'The Zermatt Valley'; a brilliant and successful rendering of the multiplicity of detail and powerful sunlight of the Alps. For beauty and complexity of colour the sunset view from Les Avants was notable, and in the 'Matterhorn by Moonlight' a task of epic grandeur was essayed. Very beautiful, though inconspicuously hung, was the little work 'Weisshorn, Zinal,' with the delicate painting of the lower mountain slopes.

M. Gos knows his native mountains under all conditions, in sunshine and storm, at high noontide and beneath the stars, and it is his desire to express not only the form but the sentiment of the hills. This feeling for the poetry of the scene, especially noticeable in some of his studies of early spring, appears, indeed, to blind him occasionally to a certain lack of beauty of form, and betrays him into such infelicities as appear in the 'Grammont' and in the 'Randa,' where an effect of brilliant sunlight and true Alpine complexity of detail is marred by an unfortunately placed chalet.

Henry Howard contributed several important pictures and a series of 'pochards' which were interesting and successful in their rendering of aerial effects. Of the larger pictures the 'Val d'Aosta' was beautiful in colour and arrangement, while the 'Tre Croci' and the 'Blue Day, Lucerne' successfully dealt with difficult colour problems.

The central place on the east wall was well filled by E. Molyneux's 'Dawn on the Himalayas,' with its carefully realised and truthful tones of the sky and its vertebrate drawing of the hill shoulders in the foreground, which appear to be covered by temporary snow. An excellent and delicate drawing of the distant peak of Everest seen by early morning light was sent by A. Scott. Several direct and effective pictures, especially a distant view of the Rothhorn, were exhibited by Mlle. Blanche Berthoud.

The water-colour drawings were less numerous than the pictures. A drawing of Lake Como by Sutton Palmer, lent by the President, was a very charming rendering of the delicate and complex colour seen in the sunlight of Italy; an effect admirably obtained by Mr. Palmer's method. B. J. M. Donne, whose method recalls Paul Naftel and J. A. Way, sent interesting drawings. Of the works sent by the last contributor we prefer the simpler and more direct drawings to those which are more elaborate. Several drawings

of pleasant colour were sent by A. Williams, especially one of 'Broadford,' and there were some rapid and successful notes of effects by R. Clarke, including a clever 'Devil's Kitchen.' Amongst other drawings Mrs. Jardine had a successful but not very solid 'Wet Day at St. Luc,' and the delicate simplicity of Mrs. Parrish's 'Morning at Chamonix' and Miss Smith's excellent 'Snowstorm in the Engadine' must not be passed over.

The hanging was on the whole well done, and in all other respects, save the paucity of visitors, the Club may be congratulated on its summer exhibition.

PROCEEDINGS OF THE ALPINE CLUB.

A GENERAL MEETING was held in the Hall of the Club on the evening of Tuesday, May 4, at 8.30, Mr. Charles Pilkington, *President*, in the chair.

Messrs. A. Barran, A. Fox, and B. Hopkinson were balloted for and elected members of the Club.

Mr. G. Yeld read a paper entitled 'An ascent of the Aiguille de Tronchey.' After the paper Dr. Tempest Anderson showed some lantern slides of the Mont Blanc range. Messrs. C. E. Mathews, Conway, and the President, took part in a short discussion, and the proceedings terminated with a hearty vote of thanks to Mr. Yeld and Dr. Anderson.

A GENERAL MEETING was held in the Hall on Tuesday evening, June 1, at 8.30, Mr. C. Pilkington, *President*, in the chair.

The PRESIDENT announced the death of Mr. W. H. Stone, a member who had been elected in 1859. He then read a letter from Mr. Coolidge stating the condition of the new edition of Ball's 'Guide.' He also intimated that Mr. Freshfield had presented to the Club the original drawing of the map of the Caucasus, the copyright of which, however, he reserved; and that Mr. Heelis had presented a painting of Gaurisankar, by Mr. Alexander Scott.

Mr. HOLDER read a paper entitled 'Climbs among the Peaks of the Adyrso, Central Caucasus,' after which Mr. Woolley exhibited some lantern slides illustrating it.

Mr. SOLLY said that he had heard from Mr. Woolley that Adyrso Bashi was 14,200, whereas Mr. Freshfield put it as 14,673. He would like to know which was correct? * He believed it was the

* There are two peaks on the great Urubashi spur E. of the Adyrso glen designated as Adyrso Bashi on the one-verst map, which is singularly faulty and incomplete in this district. In my map I have retained the name only for the southern and higher peak (14,673 ft. one-verst map), that climbed by Mr. Holder's party. The second peak I have called Sullukol Bashi (13,930 ft. one-verst map). It was climbed by Messrs. Merzbacher and Purtscheller. All these facts and figures are given in the Appendix B to my recent volumes, which can be procured separately by members of the Club on application to the Assistant Secretary.—D. W. F.

highest climb of a new peak ever made by a guideless party. He had had a somewhat similar experience as Mr. Holder with regard to official obstacles to getting about the country, but he thought that the best way was to trouble the officials as little as possible, and they were little likely to trouble the traveller. If you applied to them they had to receive you very formally, and to comply with all regulations, and so long delays ensued. There is more exploring to be done on the Leksur Glacier than in any other part of the Central Caucasus. No one has been to the head of the Chalaat Glacier, or of the western arm of the Leksur Glacier, and in the Russian survey part of the Leksur Glacier is shown as part of the Chalaat Glacier. In the winter of 1893 he was asked by Mr. Freshfield, who was then studying photographs of the region, to observe what the facts were. He bore this in mind, and while climbing on the Leksur Glacier made a note on his map that Mr. Freshfield's supposition was wrong and the survey was right, but on going 2,000 ft. higher up, he had seen over a ridge and observed that Mr. Freshfield was right. He thought that this was a wonderful tribute to Mr. Freshfield's capacities as a geographer from photographs. No one, so far as he knew, had yet climbed on Freshfield's Chatuin Tau, which appeared to be very difficult as he saw it from the south. Since 1889 no English party had climbed a summit of over 15,000 ft., which showed the difficulties met with, and how much there is to do. Even in a short holiday of six or seven weeks there would be plenty of opportunity for the younger members still to climb new peaks.

Mr. NEWMARCH congratulated Mr. Holder on having ascended so difficult a peak. The great difficulty in the Caucasus was to find camping ground near the ascent. In any exploration of the Leksur Glacier it would be very important for any party to have its camp 3 hrs. higher up than his party had been able to find ground.

Mr. G. P. BAKER, referring to Mr. Solly's remark that Adyrsu Bashi had been the highest guideless climb made, said that he had, with Mr. Yeld, climbed Basardjusi on the extreme eastern end of the range without guides, a height of 14,700 ft.

The PRESIDENT congratulated Mr. Holder's party on their climb. Falling stones seemed to be one of the great dangers of the Caucasus, and of all mountains exposed to rapid changes of temperature. The district offered the great charm of novelty to members.

The proceedings terminated with a hearty vote of thanks to Mr. Holder and to Mr. Woolley.

THE SUMMER DINNER was held at the Mitre Hotel, Hampton Court, on Thursday, June 3, Mr. Charles Pilkington, *President*, in the chair. Twenty-two members and guests were present.

THE
ALPINE JOURNAL.

NOVEMBER 1897.

(No. 138.)

CLIMBS AMONG THE PEAKS OF THE ADYRSU, CENTRAL
CAUCASUS.

By H. W. HOLDER.

(Read before the Alpine Club, June 1, 1897.)

LAST summer Cockin, Woolley, and I arranged to pay another visit to the Caucasus, and decided to proceed in the first place to the Adyrsu valley, near Urusbieh.

This valley had been previously visited by Mr. Grove in 1874, Mr. Freshfield in 1887 and 1889, and Herr Merzbacher in 1891. All three have spoken in high terms of its scenery, and we hoped to find amongst the numerous peaks which surround it one or two which we should be able to climb without guides, as we had resolved that we would take neither guide nor porter with us from 'the playground of Europe.'

On August 13 I reached Piatigorsk, and found Cockin and Woolley (who had arrived one day earlier) busily engaged in buying provisions and making arrangements for the commencement of our journey across the steppes to a village, where more serious preparations would have to be made for carrying on our baggage to Urusbieh. They had been joined by Merun and Dianos, both of whom had come from Tsageri, not, as we expected, by the direct route through Suanetia, but had ridden round about 200 miles by the Mamisson pass, Alagir, and Naltshik.

The next day we started, and the ride to Naurusov, which we reached at 3.30 P.M., was exceedingly interesting and delightful. We had a good carriage; there were fine views of the mountains from Elbruz away into the far E., the air was most exhilarating, and we were all encouraged to look forward to satisfactory results in our expedition. A short

distance out of Piatigorsk we passed several thousands of regular and irregular cavalry manœuvring in the broad plains S.E. of the town. Unfortunately Merun and Dianos missed the shorter route which we had taken, and went round by Baksanski. In consequence of this delay we were compelled to spend the night in the cancellaria at Naurusov, the first village which we reached in the Baksan valley.

On account of the absurdly high prices we were asked for horses we decided to hire an arba with a couple of oxen to take our baggage to Urushieh.

The next morning we started at about 5.30.

It was a beautiful morning; the views were charming; the rich green foliage of the valley through which we made our way contrasted in a delightful manner with the deep purple of the distant mountains, among which we thought we could distinguish one or two of our old friends of former years.

Unfortunately our pleasure was soon marred by a most trying incident. After walking for about an hour we were overtaken by a native with a troika. He offered us conveyance for a considerable distance at a low rate. We accepted the offer and went on merrily for 2 or 3 hrs. But in descending a steep hill near Ashabova (we had fortunately dismounted), either the driver exercised poor skill or the horses became furiously restive; in any case they galloped madly down the hill and, unfortunately, the troika was upset at the bottom of the hill, and the leg of the best horse was broken. After an outburst of despair by the owner of the horse, apparently accompanied with appeals to the Deity, he, immediately on our arrival, threw the blame upon us, and demanded the value of the horse, which he asserted to be 150 roubles. He even asked a party of officials who happened to pass to demand from us the amount named. We, however, had no difficulty in disproving his assertions, and when the officers had recognised our innocence, and had indicated that they could not support his claims, we gave him a 5*l.* note towards the purchase of a new horse, and this promptly relieved his distress.

It, perhaps, is worth stating that the officials, on examining our passports, intimated that we had no right to travel in this part of the country without getting them viséd at Naltshik. On our stating that, if necessary, one of our number would visit the starshina, they intimated that if we were willing to run the risk no obstacle to our progress would be presented by them.

This being my first visit to this part of the country I was impressed with the fine hills in the neighbourhood of the accident, though unfortunately here, as in so many of the Caucasian districts, there was very little water except the glacier water of the river.

As the Baksan valley has been described in Freshfield's 'Central Caucasus,' I will merely say that although the scenery is frequently picturesque and pleasing we found it a rather weary walk, as we had to wait 20 or 30 min. every hour to allow the arba to come up with us, and to be ready to give assistance, which was sometimes wanted in awkward places. We slept at night on a grass slope near the Tartar village of Akhsu, and next day progress was so slow again that it was 8 P.M. before we reached Urusbieh.

The next morning we engaged pack-horses for our journey to the head of the Adyrsu valley, and started at 8.30.

The Adyrsu torrent has its source in the glaciers of the main chain, and, after a course of about 12 miles, flows into the Baksan valley just opposite the village of Urusbieh.

We crossed the Baksan and ascended by a zigzag route up the hill-side immediately opposite Urusbieh, until we came fairly into the Adyrsu valley. For some distance we walked along a well-trodden track on the left side of the stream. Then for a considerable time we had to work up the right side. Having reached the mouth of Merzbacher's Sullukol glen we crossed the granite boulders which had been left by the torrent, and for the remainder of our journey worked on the right side of the stream. There was a plentiful supply of wild strawberries, and it was a delightful day, so our progress was slow but pleasant. About noon we rested for a couple of hours. Shortly after leaving the resting-place the valley became more densely wooded, and the track more difficult for the horses, whose progress was barred every few paces by great fallen pine trees. However, nothing went wrong, and about 3.30 we arrived at an open plateau at the head of the valley, where we decided to pitch our tents. The height was about 8,000 ft. The situation was most picturesque. We were about a mile below the termination of the Adyrsu glacier, above which was the magnificent N. face of Latsga, a peak on the main chain, which had been visible all the way up the valley. More to the W. was another fine peak—Gumachi. We soon found that there were spring water and fire wood in the neighbourhood, and, moreover, a flock of sheep was penned every night close to our camp. The owner of the sheep

was a tall interesting-looking man named Sarumbash, who seldom accompanied the sheep in their daily climbs, but who was a keen and successful sportsman, and, moreover, a shrewd business man. We were able ultimately to obtain sheep from him, though first of all we were compelled to display some little zeal and skill in bargaining. Then, however, some altercation occurred with reference to the destruction of the animals. Baksanukh, a Tartar whom we had engaged as porter at Urusbieh, would eat only what he himself had killed in an orthodox manner. Dianos held similar views, and as he was the stronger and more vigorous man, he had the benefit of the first sheep that was killed. To make matters satisfactory we suggested that they might kill in turn. I think, however, that Dianos was usually the butcher of the party.

To the W. of our camp was a small nameless peak on the ridge which separates the Adyrсу from the Adylsu valley, and from this point we fancied we should be able to obtain fine views of the higher peaks in the neighbourhood and decide on the most satisfactory lines of ascent. In the climb there was little of interest. We started at 3.50, crossed the bridge over which the sheep were usually driven, commencing the ascent in a line almost due W. of our camp. We made our way up steep slopes, first of grass and then of snow, till we gained the main eastern rock ridge, which we ascended in a N.W. direction till we reached the summit at 9.15.

The wind was bitterly cold, but by a slight descent we found a sheltered resting-place and were able to look round and form some plans for our future expeditions in this district. By the aneroid the height of the peak was about 12,500 ft. There were splendid views of Elbruz and Dongusorun, of Adyrсу-Bashi and Jailik, as well as, at greater distances, Laila, Tiktengen, and other interesting features of the chain. Our descent was much more exciting than our ascent. With doubtful wisdom we varied our return by going down a small glacier in a more northern glen. The result was that on reaching the snout of the glacier we were compelled to cross diagonally to the right bank, and were for some time exposed to considerable risk from falling stones. We propose to name this small peak Sarumbashi, and can recommend it as an excellent point of view for the Adyrсу mountains.

The Ascent of Adyrсу-Bashi.

When on the top of Sarumbashi we had singled out a peak near the head of the Adyrсу glacier, marked in Freshfield's

map as Adyrsu-Bashi (14,673 ft.), for our first serious expedition, and had decided to attempt to climb it by the N. ridge.

On the morning of August 21 we started for the ascent. The previous night had been exceedingly cold, and we all had been to some extent affected by it. But the morning was fine, so we made our preparations as quickly as possible, and actually started with Dianos and Baksanukh about 9.30.

We ascended S.E. of our camp till we were about abreast of the end of the Adyrsu glacier, then turned up the grassy slopes and cutting off a corner descended somewhat to the right lateral moraine of the E. branch of the glacier. After following the moraine till 12.30, we stopped for lunch at a point which commanded a striking view of Latsga and Gumachi on the S. of the glacier. On resuming our journey we turned up a tributary glacier descending from the W. side of Adyrsu-Bashi, which was now in full view, and at 3 o'clock decided to send the two natives back that they might have sufficient time to reach the camp ere nightfall. We gave Woolley a short time to take some views, and then divided the burdens and directed our steps up towards the depression at the foot of the N. ridge of the mountain, where we could see some rocks amongst which we hoped to find shelter for the night. Before very long we discovered that there was decided danger from falling stones, which issued from gullies in the rocks on our left (N.) and raked the route along which we had to pass. As there was no other method of avoiding these stones we crossed the mouths of these gullies as quickly as we could, keeping as close as possible to such shelter as the rocks afforded us, and were soon out of danger. We then ascended an easy snow-slope and finally took to the rocks on the N. side, reached the depression at the foot of the N. ridge at about 6 p.m., and chose the best sleeping-place we could find. And since we had provided ourselves with light sleeping-bags to keep down our loads, we all felt the cold during the night. Next morning at 5 a.m. we began the ascent of the north ridge.

On the way up the glacier there had been some discussion as to changing our plan of attack and ascending by the S. ridge. In order to be prepared to descend, if we finally considered it desirable, by this route we carried with us from the sleeping-place our sleeping-bags and other impedimenta.

The ascent of the lower part of the ridge was mainly over rocks, varied, however, here and there with steep arêtes of snow or ice. There were one or two difficult places, and on the whole the climbing was both interesting and enjoyable.

The upper part of the ridge, being mainly of steep ice, involved more continuous step-cutting, and a cornice which overhung on the E. side added somewhat to our difficulty. Gradually, however, the arête became less steep, the ice gave place to snow, and at 9.15 we reached the summit.

From the top we had a most magnificent view of the mountains: Koshtantau, Dych Tau and Shkara, Elbruz, Ushba, and Latsga—in fact, almost all the great peaks of the chain. And as the day was a perfect one we gave ourselves time on the top to lunch at leisure, note the views, and to build a modest cairn of stones. Having carried our sleeping-bags with us it was natural that we should endeavour to discover some untrodden line of descent which would be as satisfactory as, or more satisfactory than, that over which we had made our climb the previous day. We commenced in an almost due southern direction, but were stopped by a sheer break in the ridge. We consequently made our way back to the summit of the peak and started afresh down a rock gully on its W. face. Our progress at the commencement was fairly satisfactory; crossing from side to side as there appeared to be better hold or a safer line of descent. Eventually the gully opened out and we emerged on its true left side on to slopes of ice, below which the mountain-side fell westwards towards the tributary glacier in numerous terraces of rocks; the gully down which we had come becoming broader and ill-defined. We soon discovered that stones both large and small were almost incessantly bounding down these terraces from the rocks above. Before long we were forced to cross a broad channel of ice which here took the place of the main gully. Just as we were in the centre of the channel Woolley cried out, 'Stones, look out!' Cockin was out of the line of the stones. Woolley and I took as good a view of the danger as possible, protected ourselves with our well-padded rucksacks, and, as soon as the volley was over, as rapidly as possible got into a place of safety. Fortunately we neither of us suffered any serious damage. Woolley got a bruise on the shoulder which remained for some days, whilst all that I received was a scratch on one of my hands, and, as I discovered afterwards, a scar on one of my legs.

After this we managed to avoid the dangerous neighbourhood of the couloir, but only by descending the terraces by routes which were tedious and often difficult; consequently it was late ere we safely reached the tributary glacier up which we had come the day before. A leisurely stroll down the Adyrsu glacier brought us to the grassy

slopes S.E. of our camp; but before we had crossed them it was quite dark, and our progress was naturally slow. We were all tired, and were not sorry to be met by Dianos, Baksanukh, the shepherd, and his son, who, having seen our lantern light on the hill-side, had come out to meet us and relieve us of our loads.

It should be carefully borne in mind by all mountaineers who visit this district that the danger of falling stones is exceedingly great, and at present, of course, very little known. Freshfield in his book expresses the opinion that the covering of the Shikildi glacier with masses of huge stones and moraine is due to a fall of the mountain a few years ago. Those who see the glacier and accept this view will be of opinion that climbing in this region must at times be about as dangerous as mountaineering can possibly become.

Attempt to ascend Jailik (14,868 ft.)

When on the top of Sarumbashi we had noticed a striking rock peak on the Urubashi ridge, nearly 3 miles to the N. of Adyrsu-Bashi. This peak was Jailik (14,868 ft.), the highest of the surrounding mountains, and, after our victory on Adyrsu-Bashi, we determined to try to climb it, though it looked far from easy. We started on Monday, August 24, at 9.45 A.M. Having descended by the valley about a mile from our camp we turned into the side glen, which joins the main valley about this point, and, crossing to the right bank of the tributary stream, ascended it until we were in sight of the end of a considerable glacier which descended from the E. This proved to be the nameless glacier by which Mr. Freshfield's party descended from their new pass in 1889.

After following the right lateral moraine of the glacier for some time we sent Dianos (who had accompanied us so far) back to the camp. Continuing along the moraine we soon came to the infall of a side glacier, which descends from the field of névé W. of Jailik. Having crossed the end of this side glacier we began to climb up to a ridge of rocks on its N. side. These rocks, being all of granite, gave us good sport. We followed 'tur' tracks, and at 5.30 P.M. reached the summit of the rocks, and discovered an excellent sheltered place (probably usually inhabited by the tur) in which to pass the night. From this ridge of rock slopes of névé extended N.E. up to the rocks of Jailik, which was now in full view. And not only was there this magnificent view of Jailik, but also of the N. face of Adyrsu-Bashi, as well as the Kurmuichi ridge,

Ushba, and Elbruz. It was an almost enchanting moonlight night, and much warmer than on our previous expedition.

The next morning at 5 we started, making our way N.E. across the glacier which lay between us and the rocks on the S. side of Jailik, up which we hoped to make our way. The glacier was snowclad nearly the whole of the way, and in exactly 2 hrs. we came to the top of the pass immediately to the S. of Jailik, which is marked in Freshfield's map as Donkin's pass. Donkin worked out the height as 13,080 ft. ; from our aneroid we thought it might be 100 to 150 ft. higher.

Here we stopped and had food before descending the awkward slope which lay before us. For as we had been unable to discover a promising line of ascent up the S. or S.W. side, we decided to cross the pass and try our luck on the E. side.

It was a splendid morning, though there were signs in the sky usually indicative of bad weather to be expected in the course of a day or two.

The slope which we had to descend was in the centre steep, and completely covered with ice. On the feasible side the rocks were exceedingly loose and rotten, so that it was difficult to get either a safe footing or a secure hold. Moreover, as an individual in the rear moved forward it was necessary for those in front to do their best to protect themselves from falling stones, and, indeed, to place themselves in the strongest possible position, for fear of an awkward fall.

At the foot of the rocks we turned sharply to the left (namely, N., or slightly N.W.), and cut steps across a slope of névé till we reached the foot of a couloir running up to the E. ridge of Jailik. The snow in this couloir was in a very bad condition, resting chiefly on ice. We were, besides, during almost the whole of our ascent exposed to falling stones from the precipices above us.

However, by keeping as closely to the rocks as possible, and exercising great caution, we were able without serious mishap to reach the ridge which falls steeply eastward from the summit of Jailik to the head of the Jailik glacier of Freshfield's map.

Going along this ridge in a westward direction for about half an hour we came, at 12.30, upon a snow ridge only a few yards long, which abutted against a great mass of rock, which appeared to be the lower part of the final rock tower seen in distant views.

The ridge of snow fell away in the steepest of precipices on both sides, and the rocks against which it abutted consisted of smooth slabs coated in places with ice. We were forced to

come to the conclusion that an ascent from this point at the hour of day which had been reached was too dangerous to be attempted, and that probably from this point it was absolutely impossible. We consequently had lunch, then turned and commenced our descent. By the aneroid the height we reached was about 14,400 ft.

The views on the N. side were of bare arid-looking glens with small glaciers, whilst on the S. side, between us and Adyrsu-Bashi, there was a fine snow peak, apparently over 14,000 feet in height.

We spent very little time on the point we had reached, but as quickly as possible (taking into consideration the fact that the snow was in a decidedly unreliable and dangerous condition) made our way down the couloir we had climbed in the morning.

Before completely descending to the foot of the awkward slope on the W. side of Donkin's pass we noticed a gap in the rocks of the ridge which extends from the pass up to the summit of Jailik, and it occurred to us that if we could make use of this gap we should gain time and moreover avoid the rotten and unpleasant rocks encountered in the morning. We fortunately quickly discovered that the pass in this direction was decidedly preferable to Donkin's pass.

At 5 p.m. we reached our bivouac, and at 6, having warmed and finished our last tin of soup, commenced the final portion of the descent. Instead of taking the route we had climbed we took a direct line more to the E., over *huge* fragments of fallen rocks, to the nameless glacier, which we reached at a point nearer to its source.

The ramble down the glacier was simple, and there were no crevasses worth referring to; but we only managed to reach its snout and get on to the moraine a little before the light had departed. Thence it was a rough-and-tumble walk down over stones and rhododendrons until we reached the path about a mile above the bridge. Here Dianos and Baksanukh met us with food and, to the intense delight of some of us, a little wine, which Merun had brought with him from Tsageri.

We did not reach our tent till 10 p.m.

It was a source of pleasure to us quickly to discover that Merun had bought and cooked a sheep, and moreover that the shepherd, who had been away a couple of days, had returned in safety. The reason for his absence we soon discovered to have been the fact that a native of Suanetia, who had passed our tents the night before we started for our Jailik expedition,

had carried off a couple of the sheep. This had led him to follow promptly after the visitor. What occurred it was of course impossible for us to tell, but as on his return his impassive and angular features relaxed from time to time and actually almost gave us the impression that he was about to smile, and moreover as Merun had had no difficulty in dealing with him, we concluded that pleasant reminiscences were floating through his brain.

Gumachi.

The two days following were so cloudy, windy, and unsettled that we decided not to sleep out for our next climb. Almost due S. of our camp was a fine snow peak called Gumachi, from which a glacier descended in a steep ice-fall and became united with the main Adyrsu glacier just above its termination.

As this peak was only 13,481 feet in height, we thought we might be able to ascend it in one day. So on Friday, August 28, at 4 A.M., we started for the climb. We proposed to attack the peak by the W. ridge. This necessitated an ascent to the head of the glacier to which I have referred, and which might conveniently be named the Gumachi glacier. Consequently we crossed to the left bank of the Adyrsu torrent and climbed the grassy shoulder S.W. of the camp, thereby avoiding a considerable stretch of the moraine. At the commencement of our climb a thick mist had prevailed, but at the top of the shoulder we emerged from the mist and then descended slightly to the left lateral moraine of the Gumachi glacier. We ascended by the moraine till we were compelled to change our route by the precipitous rocks of Sarumbashi, on our right. We consequently made our way by a slight descent on to the glacier, up which we climbed till we were well above the ice-fall. We then crossed to the S.W., continued the climb over the glacier till we reached a point at which we could arrive at a decision as to the best line in which to continue our ascent, and then stopped for breakfast at about 6.30.

After breakfast we turned more to the S. and began to ascend slopes of glaciers and névé leading up to the W. ridge of Gumachi. There was no difficulty in these, but a number of very long crevasses caused us to zigzag considerably till we reached the schrund below the final slope leading up to the ridge.

Having crossed the schrund our leader began to cut steps diagonally towards a point of the ridge at which there was no

cornice. When he had cut twenty or thirty steps we came to a broad band of ice running down the slope from top to bottom.

This necessitated a change in our tactics, and we were now compelled to cut steps straight up the snow slope, which fortunately was hard, so that we had no difficulty in making good steps.

About 11 A.M. we reached the top of the slope and discovered that a cornice overhung so as to make it impossible without some further efforts to mount the ridge. We were compelled to make a short traverse, cutting steps in hard ice below the cornice till we reached a point where we thought we might break through. As Woolley was leading it fell to his lot to cut a passage through the cornice, a tedious process which lasted three-quarters of an hour.

Cockin and I fixed ourselves as firmly as possible, but as our leader was in a position almost at right angles to the line in which we were compelled to remain, a slip would probably have produced the most serious results. Moreover, although he had been able to secure good footholds he was compelled to cut holds for his left hand, and with his right first to cut through the outer crust of ice and then to remove the overhanging snow until a sufficient way had been made for us to ascend a few steps, and with extended arms to squeeze through the narrow gap on to the ridge of snow above. From this point to the summit of the peak there was no serious difficulty. Our way led along a ledge of snow till we came to the rocks which formed the lower part of the W. ridge of the peak, and we discovered that this part of the ridge could in all probability be easily reached from the Leksur glacier on the S. side of the mountain.

We stopped a short time for lunch, but as an exceedingly cold wind was blowing from the S. across the ridge we quickly recommenced our climb.

There were fortunately no serious difficulties. A few broken rocks had to be surmounted; then our way had to be made along a sort of gully; then a short spell of step-cutting enabled us to get fairly on the ridge which leads to the summit. Three projecting points had to be surmounted ere we reached the crown at 3 P.M.

The view was similar to that from Sarumbashi, though of course more extensive; moreover from this point we were able to look down into the valleys of Suanetia. Elbruz towered head and shoulders above his neighbours, and seemed to reign with a calm and supreme majesty.

We only spent half an hour before commencing our descent.

When we reached the cornice through which, as I have intimated, we had made our way in the ascent, there was a moment's consideration of a suggestion to descend from the ridge at a point farther to the W. As, however, this would have meant cutting steps *down* a ridge of ice, we rapidly concluded that first of all we would attempt to descend by the route which we had climbed. We had no serious difficulty in our descent to the upper part of the ridge, and as, fortunately, this had been but very slightly exposed to the sun, our steps were in a perfect condition, so that with care we were enabled quickly to gain the main portion of the Gumachi glacier. We crossed the glacier before the light had disappeared, although it became quite dark as we went over the moraine. Having lit our lantern, our line of descent could easily be seen by the men in camp. Evidently at one time we were making our way too near to a precipice overhanging the valley on the right. Our men consequently shouted, waved their lanterns, and rushed out to direct and meet us. The sound of the falling water made it clear to us that we must work slightly more to the left, and so ere very long, though with tumbles over stones and shrubs and slight hollows in the ground, we safely reached our camp.

The shepherd had seen us on the top of Gumachi, and both that night and the morning following he expressed himself to us in language none of us could understand, and which was differently understood. Some considered it a serious condemnation, others an indication of awe and deep surprise that the 'spirit of the place' should have allowed us to visit the region and return in safety.

EARLY SUMMER IN THE OBERLAND.

BY FREDERICK GARDINER.

I SUPPOSE that most of us must take our Alpine holidays when we can get them, and I also suppose that the most convenient time for the majority is late rather than early, and it is undeniable that for certain expeditions the month of August is more desirable than June. But still each month and season has its particular charm, and the climber who has invariably started work late in August can never have seen the loveliness of the Alpine flora at its best, nor have enjoyed the splendid length of a mid-June day in the Alps, nor have received the extremely cordial welcome that meets the early climber everywhere. However, I freely grant that as a rule

June is rather too early for serious mountaineering, and the only excuse for my complying with the Editor's request that I should contribute a short account of such well-known expeditions as most of those that I accomplished last summer is to show that the Alps are not closed until the middle of July, even for such middle-aged climbers as myself. I reached Grindelwald on June 4, and until the first week in July I did not meet a single climber anywhere, although I heard of one or two foreign Alpinists here and there; and notwithstanding that between June 4 and July 15 I slept out eighteen or twenty nights in huts, I had the huts invariably to myself—not the least strong argument in favour of climbing in June—excepting on the latter date, when by way of contrast I was one of fourteen at the Gleckstein. Between June 4 and 12, accompanied by my wife, and with Rudolf Almer as sole guide, I spent a delightful week in most perfect weather round the Faulhorn group—ascending Burg, the Rothhorn, the Schwarzhorn, and crossing the Faulhorn from Scheinige Platte to Giessbach; two nights we passed in the inn on the Faulhorn, and we had two as perfect sunsets and sunrises as the heart of man could desire. It is hardly necessary for me to dilate in these pages on the view from such a point under such circumstances. On the 14th Peter Almer joined me as second guide, and between that date and the 20th we ascended the Rosenhorn and the Ewig Schneehorn, and crossed the Rosenegg and Wetterlimmi, and, although we found a considerable quantity of snow everywhere, we were by no means inconvenienced thereby. The 19th and 20th were stormy days, and fresh snow fell; but as I was anxious to make an ascent on Jubilee Day, and the weather cleared up, I slept in the Guggi hut on the 21st and ascended the Silberhorn next day in superb weather. I planted a Jubilee flag on the top, which apparently did not meet with the approval of some Swiss climbers who made the ascent shortly afterwards, as they removed it.

Between June 23 and July 7 I had the best part of my holiday and fair weather on the whole, and I was successful in ascending the Mutthorn, Tschingelhorn (a much-neglected peak), Lauterbrunnen Breithorn (in most years one of the most heavily corniced peaks in the Oberland), Gross Viescherhorn, Oschenhorn, Kranzberg, and Berglistock, and crossing the Tschingel, Petersgrat, Wetterlücke, Gamchilücke, Mönchjoch, Grunhorn-Lücke, Lötchenlücke, and Lauteraarjoch. On July 9 I ascended the Lauteraarhorn by the usual S. route, finding it long and toilsome, and by no means appreciating the

necessity of crossing the Strahlegg Pass twice in one day. My last expedition was the ascent of the Wetterhorn, ascending from Grindelwald and descending to Rosenlauri, in which expedition my wife accompanied me. Unfortunately the weather was bad, and we reached the summit in a heavy snowstorm. The only one of the expeditions that calls for any remark is the ascent of the Kranzberg, which I fondly hoped was a virgin peak; but, alas! on the summit I found a tell-tale bottle with the card of Mr. Freeman, who made the ascent in 1896; * he had, however, neglected to record his conquest either in the 'Alpine Journal' or the visitors' book in the Concordia hut. It is a perfectly easy ascent, and it is remarkable that, as it is the most conspicuous mountain seen from Concordia when looking towards the Jungfrau, it has never been ascended before. The actual summit, however, is not visible from that place. The secondary peaks of the Oberland do not seem to be frequently ascended. So far as I could ascertain, the Silberhorn has been but rarely climbed for many years,† while on the Lauteraarhorn and the Berglistock the most recent records of ascents I could find, judging from the cards on the top, were about four years old. Some of the Alpine huts I occupied were extremely comfortable, notably the Mutthorn hut, where such luxuries as an Alpine library, champagne glasses, and an alarm clock were provided, and where I spent three or four days with my wife in the greatest comfort. The Gauli hut at the head of the Urbach Thal is excellent in all respects, and the Pavillon Dolfuss has been much enlarged and improved; while the Dossenhütte is very nice, clean, and comfortable. But no words of mine can describe the horrors of the Concordia as I found it at the end of June, with the remains of winter snow and ice still there, and everything reeking of damp, mould, and filth; as a friend of mine, who followed me a few days later there, observed: 'I would not kennel a dog there.' The framework of a new hut or inn is *in situ*; let us hope that before another season a decent little mountain inn may welcome the weary ones who reach this spot in such large numbers. With the mere recital of what I accomplished during the past season I think this paper must conclude, as there was no incident worthy of much remark. I had excellent guides and good weather, and everything went smoothly from beginning

* See p. 530.

† An interesting account of the ascent of this peak from the Roththal, by Sir Seymour King, will be found in the 'Alpine Journal,' xiv. 31-37.

to end ; and the only object for this paper, as I observed before, is to point out that under favourable circumstances mountaineering, even among some of the greater Alpine peaks, may be undertaken so early as June.

A SPITZBERGEN GLACIER EXPEDITION.

By VICTOR H. GATTY.

THREE years ago, in the paper which introduced the subject to these pages, I ventured on the assertion that Spitzbergen was little likely to attract the climber. This prediction has been falsified in at least two notable instances, and the facilities for visiting the islands have increased in a degree which could not then have been anticipated. Spitzbergen has, in fact, entered into a fresh period of its history, and has definitely emerged from the outer darkness of a seldom heard of Arctic land, and renewed the pleasant memories of its youth, when there were hot rolls for breakfast in Smeerenburg (so history chronicles), only the tourist has replaced the whale.

A second visit this summer, of only too short duration, to a different district, an extension of a Norwegian holiday, served to modify the opinion I had formed regarding Lamont's comparison of the islands to the Alps submerged to the snow-line, after seeing something of the country round Ice Fiord only—a country from which the parallel gains little support.

Soon after 3 o'clock on the afternoon of August 5 last, Dr. Woodman, Captain Stronge, Mr. A. Waddell, and myself landed on the W. shore of Recherche Bay, Bel Sound, at a point just S. of the right moraine of the Fox Glacier, a glacier which ends in a sheer wall of ice about 100 ft. high, rising out of the water of the bay. We avoided the ice at first, and went on up through a little valley which lay between the moraine and the hill to the S. of it.

This part of the island is entirely different from the country round Ice Fiord, where mosses, flowers, and lichens cover the low-lying land along the coast and in the valleys, and extend in a tentative way even to the tops of hills 3,000 ft. above sea level. Round Recherche Bay the valleys are filled by glaciers, and the little vegetation which is to be seen down at sea level ceases entirely a short way up.

The little stony valley we went up brought us in $\frac{1}{2}$ hr. on to the glacier at the point where it commenced to be snow-covered. Before going on to the ice we left behind some

surplus provisions and a part of our apparel, which we found too much for us already—a practical testimony to the geniality of the Spitzbergen climate.

Soon after getting on to the ice we thought it advisable to put on the rope, although no more than 450 ft. above sea level. From that point there was a sharp rise of a few hundred feet. Whilst we were ascending it an unexpected and unwelcome mist came on, which blotted out everything more than a hundred yards away.

As the owner of the rope and the possessor of the only ice-axe in the party I had found myself in a position to nominate the leader, and, with the negligence which marks the holder of an assured position, had omitted to take the bearings of the peak we were making for whilst it was still in sight. We knew, however, that it was across the glacier some way up, and steered a diagonal course by the sun, which just showed through the mist, saving us the trouble of constant reference to the compass, and inspiring hopes as well of better things above.

At the top of the slope we came on a fairly large snow-covered crevasse, which was chiefly remarkable as the only one of any size we crossed on the whole expedition, and went on hard over an almost level plain of snow stretching all round us into the mist, and devoid of all indication of crevasses. The snow was shallow and not bad (it was rather loosely packed granular ice, like hail, than snow), but in some places the steps went through the crust, which appeared to be firm, into six inches of slush underneath. Why it should melt underneath and not on the surface seemed hard to explain, as there was no appearance of melting and refreezing on the top.

After going hard for an hour over the same endless plain we heard a faint sound ahead, the cause of which we could not exactly determine, but took to be either running water or the mingled cries of birds. At least, we were sure, it meant that the edge of the glacier was there. As we advanced, the sounds became louder, and suddenly a huge cliff appeared above the mist a few hundred yards away. A few steps more and we were under blue sky, in the sunlight, and saw that the cliff was the face of the peak we had been aiming for. The sounds now appeared to come from the cliff, and must have been caused by a great number of birds nesting in the crannies of the rocks, though none were visible excepting one, which sailed round slowly above us, uttering a plaintive cry. It was a large bird, of spotlessly white plumage; but not one of us

was ornithologist enough to name it. When we came back, seven hours afterwards, it was still wheeling round above, as though the guardian of the glacier.

It appeared impossible to climb the cliff direct, so we kept up the glacier to the end of the west ridge of the peak. The glacier here divides : to the W. lies a wide snow basin, surrounded by peaks, many finely shaped ; whilst N.W. a longer but narrower branch runs up behind Mount Fox. It was this branch we mounted to the foot of the ridge, and there on the rocks we pitched our camp for a time at 6 P.M., 1,400 ft. above the sea.

We could, from the point where we were sitting, see the whole expanse of the glacier, down which the mist was now clearing ; it runs straight up to the west from the bay to a huge snow basin, several miles wide, surrounded by peaks of varied form and character (I counted fourteen in all), some with sharp rocky arêtes, which might afford some scrambling, and steep snow faces showing the bergschrund line at the bottom, others with round and glaciated domes. To the N.W., beyond the ridge we were on, lay the head of the glacier, narrowing to a well-marked col between steep peaks.

We could readily have imagined ourselves in the Alps, nine or ten thousand feet above sea-level ; indeed, the view was strongly suggestive of the snow basin at the head of the Aletsch glacier, seen from the Concordia hut. The glacier basin and the ring of peaks containing it appear to occupy the whole of the promontory which lies between Recherche Bay and the sea.

The peak at the foot of which we were sitting should be called Mount Fox, as, although it is certainly not the highest of the mountains round the glacier, it most completely dominates it. The back or N.W. side sloped up above us ; it was quite clear of snow, and covered with steep and slippery screes. Up this slope the Doctor and I found no difficulty in making our way to the top of the peak, which we reached at half-past seven. As we got higher, to the S., W., and N., through the various gaps between the peaks, we saw a white and undulating plain resembling an immense glacier, which greatly excited our curiosity. It seemed to be an ideal representation of the 'high inland ice' which is writ so large upon the Spitzbergen chart, but in the wrong direction. The wider view from the top disclosed its real character. In every direction over the water, by which the promontory on which we stood is almost surrounded, lay a vast sea of clouds dazzlingly white in the sun, which shone out of a clear blue

sky above. Out of the clouds, which lay about 700 ft. above the sea from N.W. round to S., rose innumerable peaks, as sharp and clearly defined as the nearest rock. To the N.W. appeared Prince Charles Foreland, showing five peaks—small, but still dark blue, at a distance of seventy or eighty miles; to the N. lay the entrance to Ice Fiord, the S. side marked by a conical peak. From there round to E.S.E. the mass of shapeless hills between Ice Fiord and Bel Sound their prevailing colour black, with patches of snow and glacier here and there, and the entrances to the various bays of Bel Sound plainly defined by the fog which filled them. Across the bay there is a big hill above Reindeer Point, and S. of it, to the eastwards, rose a range after range of hills of finer shape, with faces and arêtes of grey and red rock, most of them clear of snow on the S.W. side, but snow-covered or glaciated on the N. On this side alone we counted sixty-five separate peaks, all, of course, unclimbed and unnamed. To the S.S.E. (by the compass) there is a high and distant rock peak, with a double-toothed point, throwing down a steep snow wall or glacier between them. A reference to the chart shows that this peak, which must be twenty- or thirty miles distant, lies nearly in the middle of a district marked 'High Inland Ice.' Of this ice sheet we saw no trace, but only ranges of hills stretching away to the west and S.E. as far as the eye could reach. Were there any unbroken sheet of ice in this direction we could not have failed to see it, and I believe that this district will be found to be very different from the large, blank sheet of inland ice which represents it on the chart. It appeared to us to be purely Alpine character, as far as we could see, probably with glacier-filled valleys.

The height of the peak we were on was 2,400 ft. by aneroid, and the temperature on the shady side 42° F. at 8 P.M. It is connected by a sharp ridge with another peak (which might be named North Peak) to the N.W. At the S. foot of this latter lies the col. It was our intention first to go over this peak to the col, but we found that the ridge was extremely rotten—a condition which the climate of Spitzbergen seems peculiarly adapted to produce—studded with gendarmes, which would probably have necessitated a good deal of step-cutting on the steep northern face. This ice face ended abruptly in a wall, sometimes or 15 ft. high on the top of the ridge, the south side being entirely clear of ice and snow, excepting in gullies, right down to the glacier, but impassably steep

rotten. For this kind of work we had no time, and therefore decided to go back down the ridge and across the snow basin to rejoin the others at the camp.

After a hasty supper we all left again, just after ten o'clock, and made for the col. The valley we were now traversing is a névé basin; the slope, at first very gradual, becomes steeper below the col, which we reached at 10.30 p.m. The height is 1,750 ft. On the other side there is a steep but short glacier, apparently very little crevassed. Just below it lay the cloud bank which betokened the sea beneath. We found seats on the rocks above the col, and for half an hour enjoyed the marvellous view over the clouds to Prince Charles Foreland, still clear and blue in the distance. The sun was shining warmly. At 11 p.m. it was due N. by the compass, and the thermometer exposed to its rays showed a temperature of no less than 62° F.

Soon after eleven o'clock we started down again, following our tracks. We were now in the shadow of North Peak and Mount Fox, and the snow was frozen crisp and firm, although the thermometer never fell below 36° F. in the air. Through the gaps to the S. the sky was a beautiful green blue, and the sun was shining brightly on the peaks round the snow basin. It never sank low enough to tinge the snow with sunset or sunrise tints, even at midnight. It was just at that time that we emerged from the shadow of Mount Fox into the sun and felt the warmth of its midnight rays. Soon after this we plunged into a dense fog, which still held the lower levels, and from that moment saw the sun no more. A stretch of bare ice caused us to lose our tracks, but the shape of the glacier enabled us to readily find the spot at which we came on the ice, and to resume the cast-off clothing which the cold, damp fog now made acceptable. We had taken an hour and three-quarters from the col, hard going, without stops. The distance, therefore, would not be less than seven miles; adding to this two miles down to the sea face, gives nine miles as the length of the glacier, or about that of the Gorner glacier or the Mer de Glace.

We reached the shore just after 1.30 a.m.—10½ hrs. after we had left it—and all agreed that never had we shared in a more enjoyable or more remunerative expedition, devoid of difficulty or adventure as it was. Though climbing for its own sake may attract but few so far afield, it will always remain true that none can properly appreciate the charm of these arctic islands without some taste and capacity for mountaineering work. The peaks and glaciers of Spitzbergen

are no less numerous than those of the Alps, and if the hills are small it may be safely prophesied that the distance which separates them from the centres of life will save them at least in our time, from the complete 'exhaustion' which has overtaken their greater Central European brethren.

AROLLA IN AUGUST 1897.

By W. C. COMPTON.

THE opening of a new hotel—the Kurhaus—in the summer of 1897, drew to Arolla a very considerable number of visitors—climbers especially—who, for reasons which it would be impolitic to enter into in detail, had partially, or wholly eschewed that very attractive valley in previous years. At the venture of Herr Spahr was further justified by the number of would-be guests who were turned away, or kept lingering at the Dent Blanche of Evolena in the fond hope of finding a room at the Kurhaus in a few days, or who boldly stormed the wooded slope on which it has been erected only to find that before retiring to rest they must await the night evacuation of those rooms on the ground floor which had been intended for use only by day. Here at times, if the atmosphere were not too clouded by certain vapours, much sought after by some, to allow of a clear view across the spacious chamber, might be seen couches spread along the floor, where the destined occupants were doomed to see them used as divans until the frequent visits of reconnaissance in force by the burly portier had succeeded in dislodging the last lingerer. From the hotel the writer of a paper might not unnaturally proceed to descant upon the surrounding scenery, the rich variety of peak and glacier, snowfield and crag, within easy striking distance. But as most readers of the 'Alpine Journal', are not unacquainted with the valley, it would be idle here to dwell upon its peculiar attractions. Suffice before these pages took part, to pay a tribute to the flora, unstopped among all the valleys of the Alps in profusion and fragrance, if not in the rarity of the species; though everywhere there was much to furnish themes for discussion among botanists, who were well represented, round the log fire at the day's work was done. Another speciality must not be overlooked that furnished several at least of this year's guests with much of the enjoyment which will long remain with them

a remembrance of Arolla and its Kurhaus—I mean the bathing-pool among the Arolla pines, about 150 yards from the hotel. Here were to be found at 7 A.M., when the rising sun was resting on the summit of the Za, a few enthusiasts who preferred a plunge *al fresco* to other means of shaking off dull sloth. Here again at 3 or 4 P.M. those same or other forms might be seen courting the Naiads, a trifle less hasty in their attentions now that the edge of the crystal wave had been blunted by Phœbus' rays.

In a word, though the season bore some slight resemblance to that summer of our discontent, 1896—and though the watery meads hard by produced the frequent gnat to occupy the attention of such as in moments of idleness loitered among the pines—in spite of these trifling woes there can be no doubt that Arolla possessed attractions not to be hastily overlooked. Certainly there are many firesides in England that will be brighter this winter for the memories stored up from Arolla in '97.

The scrambles of a week, from Saturday, August 7, to Saturday the 14th, which, at the Editor's invitation, are here to be described, include nothing remarkable—no first ascent, no hairbreadth escape. It is a plain, unvarnished tale from the hills, not including even the biggest thing that Arolla has to offer for a single day's climb—the Bouquetins—which, I believe, only succumbed this year to the attack of one intrepid climber, Mr. L. S. Calvert, who started his programme a day sooner than we did, and so was able to get in that difficult peak on the day we devoted to the Aiguilles Rouges. It was with the utmost reluctance that he yielded to the pressure put upon him to leave a record of his route—apparently a new one—in the MS. guide-book compiled by Mr. Larden, and now deposited at the Kurhaus to the great advantage of guests at that hostelry.

Our first climb was only decided on after breakfast on a day—the 7th—which did not promise over well. The party consisted of Dr. J. Collier, Mr. L. Curtis, and myself. We started at 9.35 in a half-hearted way to try, if the weather chanced to hold out, what might be our luck with the Petite Dent de Veisivi (3,189 m.=10,463 ft.). We had no guide, and none of us had been on any expedition in the neighbourhood of Arolla before. There was no time for attempting the traverse of the ridge, first achieved by Mr. F. Aston Binns the previous year. And there is little to record beyond the fact that we found the W. arête a very interesting, but not difficult climb, on the way to which we were led astray by a

guide with an apparently inexperienced climber, whom I wished to take on to the *lower W.* point, saying that was the *Petite Dent*. We thought our persistence in a different opinion contributed to the result afterwards achieved by the party, but, be that as it may, we were decoyed off the true ascent, the lower slope from the Alp Zarmine, and so lost quite half an hour. On the return journey one of our party separated from the rest, and found a much shorter descent of a rather uninteresting slope by means of a dry torrent couloir, which terminates abruptly above the white patch of stones visible from Arolla, but allows of a not difficult scramble down the face of the rock for about 20 ft. on to the stony slope, when the Alp is again easily reached. A very small spring besides the path to the Col de Zarmine, about $\frac{1}{4}$ hr. above the Alp, worth noting as the last water to be found on this expedition. We did not hurry up or down, and, as has been already observed, lost time on the way up. The summit was reached at 2 P.M. The descent (to Arolla) takes about $2\frac{1}{2}$ hrs. The rock is exceedingly good, and the peak can be climbed almost anywhere. Being short and sweet, it is an excellent climb to begin upon. Collier, as leader, gave a beautiful display of mountaineering art for which he is famous in the Lakes.

Monday was a wet day—at least, a wettish day. The same party explored the Dent de Satarma, to which attention has been drawn by Mr. Slingsby in Mr. Larden's book, where the description may be found of a sharp tooth, 120 ft. high, overhanging in two directions, above the chalets of Satarma, and close to the Blue Lake. It was apparently first climbed by Mr. Slingsby and a party of three others, including a lady, and is further described as consisting of an extremely sharp 'knife-edge,' requiring an extra length of rope. We found it a very nice little climb, which must have been made a good many times, to judge by the scratches on the rock, and which, as Arolla comes to be more frequented, will no doubt furnish a gymnasium for off days almost as popular as the Riffelhorn, but with this drawback—that there is not room on it for more than one party at a time, and there is no probability of a traverse being invented. The 'knife-edge' is confined to a very few feet, the steepest part of the arête being fairly broad and flat, though with just sufficient hold for fingers and toes, and an ordinary rope of 80 ft. sufficed. Our movements were watched—no doubt with some amusement—by two other climbers (A.C.'s), with two Zurbriggens, who arrived upon the scene while we were too much occupied to observe them, until their delight over our embarrassments announced the

presence, and who in turn afforded us an exhibition of their agility when we had made room for them.

The evening promised well for a fine day on Tuesday, and, as certain exits and entrances were to be effected on Wednesday upon the stage of the Kurhaus, it was thought well to announce a general expedition, to be 'personally conducted,' to the Pigne for the following morning. Names to be given in to the organising secretary after *table d'hôte*, and each member of the party to be responsible for at least a quarter of a rope and his own provisions. At one time the response to the announcement seemed likely to lead to a party of somewhat alarming proportions; but, happily, by 8 A.M. on Tuesday enthusiasm had cooled down, and there were only found at the breakfast table—for this expedition—two rope-fuls, a four and a three. We got away at 4.5, just as daylight was beginning to streak the sky, which chanced to be the nick of time, as we were just able to make our way through the wood without a lantern, which would have been almost indispensable a quarter of an hour sooner. The incidents of the climb were few; the difficulties, of course, none. For did we not follow tracks upon the ordinary route, *via* the Pièce glacier, across the Bergschrund, and back by the Pas de Chèvres? The rope was donned at 6 precisely, above the icefall of the Pièce; the rocks on the Col reached at 6.45, where a much-relished breakfast, as we watched a party wending their way to the Collon, sent us on our way rejoicing up the snow slope and across the Schrund, where the ropes were joined, as the bridge did not appear very sound, and the wall on the upper side was iced by the daily melting of fresh snow; but the summit, gained at 9.40, in a keen westerly wind—a remarkable change of temperature after the scorching sun on the toilsome S.E. slope—did not invite as long a sojourn as the faultless view deserved. It is said that the Mediterranean has been seen from the Pigne d'Arolla. We could distinctly make out a line of blue hills, with a patch or so of snow on them, *beyond* the northern plain of Italy, due south of us. What could this be but the Maritime Alps near Genoa? An hour was pleasantly whiled away over lunch in the shelter below the S. arête, close to a particularly lovely Schrund, hung with the most exquisite fringe of icicles; and after a very unsensational descent—wholly devoid of the thrilling incidents described in the 'Standard' of September 7 (or 8) by the gentleman who concluded his 'perilous ascent of the Pigne' by crossing 'snow bridges and crevasses at every step,' and finally being 'hailed up the difficult Pas de

Chèvres'—we halted for the last time at the top of this curious ledge at 12.25. Nor did we hurry down the flowery vale of l'Arolla; for the bathing-pool would wait for us, and the tea-makers in the wood might be disconcerted by a too speedy return.

Wednesday, another good day, witnessed departures and fresh arrivals. The latter included our guide, Alois Burgener. His son Siegfried was to have come with him, but had a business engagement which kept him from sharing with us the expedition that stands out in retrospect as perhaps the best climb of the year, though we did get a ducking as we returned; which the map now before me is a witness, being richly steeped in a hue that I recognise as bearing a strong resemblance to the lining of a certain Norfolk jacket, which was last worn by its then owner on the Charmoz, and which is now, belike, a memory of Arolla and Cogne and Montanvert in the home of the Burgeners at Saas.

Thursday morning was warm—very uncomfortably so, so that people thought as they toiled at a remarkably rapid pace up the slope to the E. of the valley towards the Glacier de la Z. Two parties started from the Kurhaus at 3.30 A.M., one intending to take the Aiguille de la Za (3,662 m. = 12,015 ft.) by the snow couloir to the N., the others having before them the longer, but, as they believed, more interesting climb known as Miss Richardson's,* by the W. face. The former were heard on the top by the latter when still 2 hrs. of steady work in a fairly vertical direction lay before them, and may be dismissed with the compassion due to those who have been within measurable distance of a good thing.

The party who made for the W. face consisted of Messrs. Collier, Valentine Richards (from whose note book the following particulars are mainly drawn), and the writer, with Alois Burgener as guide, none of the party having attempted the ascent before. A bull's-eye kodak should not be omitted as an interesting member of the party, though somewhat scornfully alluded to in a former number as an attribute of 'the sporting climber, who depicts only what the German call "detail pieces," with a view mostly to the illustration of his own or his friends' exploits.' On a peak such as the Za, a kodak provides occupation during periods of waiting, and some amusement afterwards in its records of the climb.

Reaching the foot of the moraine in 1½ hrs. from the Kurhaus, we made a short halt for a snack before attacking

* *Alpine Journal*, vol. xiv. p. 498.

our peak, and on striking the glacier the ropes went on, and the two caravans parted company, they of the couloir keeping to the N. side, while we of the rock face bore more to the S., soon striking an island of rock, conspicuous from Arolla, which we crossed, still bearing steeply up to the right, and then took to the snow again which separates this island from the main rocks which form the base of the peak. This snow-field stretches up into the broad couloir to the S. of the Za, which is not a desirable route to the top, as it is deeply furrowed by falling stones from the ridge to the S. of the Aiguille. For some distance, however, it may be safely followed till the foot of the Za has been turned, where the rocks rise too abruptly out of the snow to afford an easy point of attack, though in 1895 Messrs. Cookson and party were driven on to these rocks by falling stones in the couloir.* At the second notch, however, the rocks, which had been kept close on our left, invited us to quit the snow; and a fairly easy ascent—sometimes rather rotten, but good on the whole—led pretty straight up towards our peak till we found ourselves on a comparatively level slope of rock, where a rusty key to a sardine tin furnished an indication that we had not missed our way. Here we made another halt of 20 mins. (8.30) before addressing ourselves to the last and steepest tug. Near this it was that we heard the shouts of the other party, who had no doubt reached the summit, almost vertically above us. We did not at the time imagine that two hours of tough climbing separated us from them. We were now level with a great gendarme on the W. ridge, defending the peak from any assault by the arête. Turning to the right, we once more took to the snow couloir, but only for a few steps, which had to be cut, in order to turn a somewhat unpromising bit of rock; and presently found ourselves at the foot of the 'Golden Stairs,' the name we gave to the 'crack of a deep orange tinge' of Miss Richardson's account,† which there was no mistaking, on our left. The face of the rock is here so smooth and steep for 100 feet or so that, but for this curiously serrated crack, no ascent on this side would be possible. The crack offers a quite easy and perfectly safe ascent on a staircase of excellent rock carved out of the face of the cliff. It is so steep that the last man (who carried the kodak) could observe the movements of the leader between the feet of the last but one. The efforts of the kodak look decidedly quaint when

* *Alpine Journal*, vol. xviii. p. 49.

† *Ibid.*, vol. xiv. p. 498.

translated by the lantern; but it was beaten by the problem how to give the appearance of the angle as seen from below. As Miss Richardson is said to have climbed the crack for about 70 ft. and then turned to the right, we took to a sloping chimney on our right before reaching the end of the stair. None but the leader could judge, and those who were below had simply to wait their turn, which in the case of the last man was something like $\frac{1}{2}$ hr.; for the chimney was not high and appreciated by those who had to make its acquaintance first, especially as the leader wanted all the rope before he found a place where he could be 'fest,' and so left the second man half-way up the chimney, *sans* rope, *sans* foot and hand hold, *sans* everything except a firmly-rooted faith in the laws of gravitation, of which he believed himself destined to furnish an illustration. The others had to follow as the rope came down again to each, and the last man had the satisfaction of witnessing the complete disappearance for a considerable period, of all his companions and the rope. Nor did this latter reach when at last thrown down. A few steps, however, put the end within his grasp, and another effort brought his waist within its embrace. This passage cost a considerable loss of time, for we afterwards concluded that we should have done better to follow the Golden Stair a few feet further, whence we fancied an easier traverse by ledge to the right might have been effected. From this point we tried at first to force a direct ascent; but, failing in the attempt, descended a few feet to a distinctly satisfactory traverse to the right across a very sheer face of rock which was conveniently provided with excellent ledges, though not all on the same level, in one place the only hand-hold being reached by dropping the right foot down below the ledge the left was resting on, till the left hand could lay hold along the edge of the left foot, whence another drop led to the next ledge. This point might have been immortalised by a snap (on the level), but the light had by this time gone to the bad, and a fine snow was falling. At the end of this traverse good rock led almost vertically up to the S. arête of the final peak, apparently some distance below the point at which it had been struck by former parties, who appear to have reached the ordinary route at the foot of the last chimney before the summit.* This bore out the belief that the traverse from

* In the account of Miss Richardson's ascent (*A. J.*, vol. p. 498), it is said that the W. arête was gained a few feet from the summit. The route now followed in every case strikes the arête.

the Golden Stairs was taken too soon. But the mistake, if it was a mistake, was well repaid by the additional interest of the climb, both before and after reaching the ordinary route, which belongs to the usual order of climbs at Arolla 'from the other side.'* As we rose one after another over the ridge we saw a party from Ferpèche just arriving at the same point. They were on the slab, which is one of the difficulties of the short climb 'from the other side'; and this fixes the exact point at which our route struck the arête, viz. below the *lowest* of the three chimneys leading in rapid succession to the top. We reached the summit at 10.35, having been 4 hrs., exclusive of halts, on the rocks. Of view from the peak there was little. We were lucky to have any at all, and not to be already in cloud and snow. The small sleet that had fallen for a short time had now ceased, and we were allowed a partial view of the Dent Blanche and some of the other giants whose heads, as well as their feet, were veiled in mist. The descent was fairly rapid, as bad weather was evidently to be expected; and, as already hinted, by the time we had crossed the Col de Bertol heavy rain came on, and continued with increasing energy till something like sunset on the next day. We consequently postponed our final consumption of supplies till we had reached our quarters (2 P.M.), where we shook off our drenched slough, and, being too late for an ordinary meal, proceeded to devise an original picnic in an upper chamber, which was all the more keenly appreciated as our last halt for investigating the commissariat had been on the rocks at 8.30.

Friday evening brought a respite from rain; and in view of the theory attributed to Arolla guides that 'if it rain to-day, it will be fine to-morrow, and *vice versa*,' it seemed right to make plans for an attack upon the Aiguilles Rouges. Siegfried Burgener had arrived—an excellent young climber, who proved himself equal to every emergency the rocks we encountered this summer could offer, and whom we regretfully left in bed at Montanvers, at the end of the season, temporarily disabled by a too intimate acquaintance with the substances of which the séracs of the Nantillon glacier are composed. The night was brilliant after the rain of more than 24 hrs., and at 2.20 A.M. there started the following caravan:—Messrs. T. Brushfield and H. Owen, with guides E. and I. Furrer, and Messrs. Collier, Valentine-Richards, and myself, with the two Burgeners. The project was to

* *Alpine Journal*, vol. xiv. p. 85.

traverse the central peak of the Aiguilles Rouges from the col to the S., and then follow the ridge of the S. peak, as far as possible reversing the route described by Mr. Slingsby. We were provided with four 80-ft. ropes, all of which were subsequently used.

Brilliant moonlight saved us the necessity for carrying a lantern as we crossed the pleasant grassy slopes to the Prâgras Alp, whence the track by the watercourse leads to snow patches and rock débris at the foot of the lower Aiguilles Rouges glacier. A fairly steep climb up the moraine brought us to the upper glacier in 2 hrs. 20 min., whence we witnessed that glory of the Alps, the change from moonlight—the moon had only just passed the full—to day and sunrise. For a while Diana reigns in heaven without a rival, but slowly and surely her power must wane as the blue colour of light spreads upward from the bed of Tithonus, and the ever shadowy forms of the mountains begin to stand out sharp and clear against the sky, till at last Aurora's 'cheek begins to redden through the gloom,' and the rosy-fingered morning appears and tips the peaks with gold. The valleys are all buried under 'the far-folded mists' that 'float up from those dim fields about the homes of happy men'; but the peaks of the Oberland and Pennine range, each and all distinctly visible, rise above the sea of cloud, eager to catch the first glimpse of Apollo. And now the Dent Blanche catches the sunlight, now the Matterhorn, followed by Dent d'Hérens. Can the kodak catch such a glorious view? It is but a memorandum, but there it is. There is the Jungfrau, the the Aletschhorn and Finsteraarhorn; here the Weisshorn, Rothhorn, the tiny point of the Za, and all the favourite Titans of the Valais—but the rosy light that tinged them is lost—only the wimple in which the Dent Blanche veils herself from the too bold glare of Phœbus is there.

A little less than an hour over snow brought us to the foot of the second snow couloir that runs from the glacier up into the E. face of the central peak. Here the ropes are put on—we form three two's and a three—a simple bergschrund is crossed, and soon we are upon the rocks to the N. of the couloir, where the first halt is made (5.55). At 6.10 we are again en route, climbing straight up sound and easy rocks to we reach the col between the N. and central peaks (6.30).

A tower, followed by a very sharp ridge, leads to the foot of the central and highest peak, which rose before us majestic

* *Alpine Journal*, vol. xiv. pp. 84-88.

from the Val d'Hérémence. From this point we ascended by rocks on the E. side of a conspicuous gully facing us, from the top of which a most interesting climb—on or close to the arête—led to the top in $1\frac{1}{4}$ hrs. after first striking the ridge. [The 'Climbers' Guide' gives 2 hrs., but our time was ample for four parties, waiting for one another.] At 8.15, after enjoying a glorious view in both directions for half an hour, we started for the S. peak, and descended the easy ridge to the gap in 40 min. [The ascent of this ridge took the first party 25 min.* It is just the kind of rock to climb quickly.] The south Aiguille rises from here in a gradual ridge, very much serrated, like a cock's comb, with probably some fifteen or twenty pinnacles on it. The W. side falls in a strikingly bold precipice to the Darboneire glacier; the E. is seamed by a number of couloirs with intervening buttresses, by which it would look as if a descent could be effected at almost any point; but in reality the slope breaks off above the glacier in a sheer cliff of some 100 or 150 ft. The gap between the two peaks has, however, been reached from the lower Aiguilles Rouges glacier. We climbed two of the pinnacles, but the fourth presented a most forbidding appearance. This is probably the one which Mr. Slingsby's party descended by a perpendicular chimney. This some of us thought we recognised when we were on the second pinnacle in a cleft on the N.E. face. We, however, turned it by descending, for nearly a rope's length, a steep ice couloir, which runs down the E. face from the gap between the second and third pinnacles to a hole, accommodating one or two at a time, with a curious window, from which one may look right through the ridge towards the W. and the glacier below. A short traverse led to a conspicuous and difficult crack, which was climbed, and which brought us nearer to the ridge again. From this point the climb was one long and rather monotonous traverse on the E. face. We descended another couloir for some distance, and climbed to the buttress on its further side; thence we trended gradually upwards, and approached the ridge finally at a cairn-crowned pinnacle, probably the true summit. Without stopping here, we went on past two minor towers to another cairn. This pinnacle is a foot or two lower than the other, and appears to be Mr. Slingsby's 'minor summit.' The height is not given in Conway; it is lower than the N. peak, which is visible from it. [This is given in the 'Climbers' Guide' as 'about 3,600 m. = 11,811 ft.'] We reached it in

* *Alpine Journal*, l. c.

2 hrs. 20 min. from the gap. These times are slow, as they are those taken by the last rope of a party of nine. In places our party had to wait till the others had passed to some distance for fear of stones, and the first were probably about 2 hrs. reaching the second summit. This point has usually been reached by the couloir which leads from the lower Aiguille Rouge glacier [not the Glacier des Ignes, as Conway says]. I distinctly remember * looking up to the highest point from the glacier, which would not have been the case from the Glacier des Ignes—see map] to the gap S. of the southern summit and the ridge. This gap has also been reached ascending the Glacier des Ignes, and passing over a minor summit still further S. But the guides, fearing stones in the great couloir, led us down by a ridge at the side of a smaller one which starts from the gap just N. of the cairn, after descending which some way we traversed to the right (S.), still descending and crossed the great couloir at the foot of the snow. Still keeping the same direction, we got off the rocks on to steep snow in 1½ hrs. The descent required care, and was not particularly easy, though there was no difficulty in finding the way; nor did we see any sign of falling stones. A steep snow slope brought us down to the lower Aiguilles Rouges glacier, whence we returned home in a leisurely fashion by Praz Gras, reaching the Kurhaus at 3.30, and the bathing pool soon after. None of the party had been on the southern Aiguille before, and it would appear we kept more on the face than was actually necessary. The climb would certainly be made more interesting by keeping as closely to the ridge as possible. But our guides were unanimous against the third of the gendarmes; and, having abandoned that point there was nothing for it but to follow the course we did.

In retrospect the climb as a whole seems to occupy a position second to that of the Za by the W. face. The central peak is an excellent climb. By itself it is quite a short affair: the rock as good as any that can be met with anywhere; the view from the top, as well as from the foot of the rocks, superb; and the whole excursion remarkably free from that dreary expansion of moraine which falls upon one so often at the end of a climb. It should also be observed that in spite of the bad weather of the two preceding days there was no fresh snow. For lovers of rock a better expedition can rarely be met with. But as for the descent of the central, and the traverse of

* Most of the above details are copied verbatim from a memorandum of Valentine-Richards.

S. peak, in the direction in which we took them, though the couloir with the window, and the crack that beat us all except Collier—for it took the two Furrers, piled like Pelion on Ossa, to reach the first hand-hold, and the rest were hauled up to it—and a certain loose boulder, which wobbled as one of the party put his foot on it, causing a very rapid strategic movement to right and left on the part of two others standing vertically underneath it—though these incidents stand out from the rest, and, assisted by sundry snap-shots, lend a peculiar interest to that portion of the expedition, I own to a certain feeling that the E. face of the south peak was otherwise rather dull, and came a trifle flat after the best of the climbing had been tasted and the views enjoyed, on the first and highest peak. It would doubtless be better to take it the other way, as has been done in the two or three recorded ascents of the S. ridge; but being uncertain in what state we should find the rocks after all the rain of Thursday and Friday, we wished if possible to reach the best peak, and to try the other if the conditions seemed favourable.

It has been said that few mountains in Switzerland afford so good rock-climbing as the Arolla peaks. If an illustration of this statement can be found in this commonplace narrative of very ordinary work, done in a week of very uncertain weather in August last, and if thereby the improved attractions of the valley are advertised for the benefit of those who know them not, I trust the Editor may find therein some compensation for having invited this contribution to the pages of the 'Journal.'

THE TOUR D'ARPISSON.

By THE EDITOR.

IF it be true that the man who makes two blades of grass grow where one grew before deserves well of his country, it would certainly seem that he who finds at an Alpine centre a second unrivalled view-point where one was previously known deserves well of all mountain lovers. The Pointe du Pousset is well known, or at any rate the guide books assume that it is, to all visitors to Cogne. Its great features are the view of the Grivola across the Trajo Glacier, and of Cogne at the spectator's feet. As to the view of the Grivola, I am inclined to think that, though undoubtedly striking, the great peak from this side shows little of that beauty for which, when seen from the north, it is so deservedly famous.

In 1896 I started to climb the Tour d'Arpisson, which received its name, though it cannot be said to overhang them, from its nearness to the Arpisson chalets, a spot* long known for the beauty of its outlook, but, thanks to the snowstorm, or the deplorable season daily offered itself when the climber asked for sunshine, failed to effect more than the passage of the Col de Pila. We did actually see the peak for a minute or two once or twice, and it remained in my recollection as a very desirable climb for a short day. This summer, with my friend Dr. Tempest Anderson, and the Guides François and Sylvain Pession, I again visited Cogne, and, though the weather was anything but settled, a fine morning did at last reward us after several dark days of nothingness, when the only thing to be done was to 'arrange,' so did Pession phrase it, the vagrant cur, or to chase from one's room the harmful, unnecessary cat, or to study arboriculture in the shape of the genealogy in the dining room, and count how many names have the suggestive words attached to them, 'Soldier of Napoleon, never came back.' We therefore started for the Arpisson chalets. Soon after passing them we divided the party. Anderson took Sylvain and devoted himself to photography, whereof one excellent result may be seen in the illustration to this paper, whilst Pession and I attacked the Tour d'Arpisson. The weather on this occasion was exceptionally brilliant. We saw very clearly our last year's route to the Col de Pila, and by implication a probable way to the summit of our peak, but decided for the sake of novelty to climb to a notch in the ridge which runs from the Tour d'Arpisson to the Pointe de Garin. As is explained elsewhere (p. 527), the point 3,252 of the Italian map does not stand in the position of the Tour d'Arpisson, but is nearer to the Pointe de Garin; it may be called Punta Fiorito from the huts below it. The Tour d'Arpisson lies about half way between the Punta Fiorito and the point marked 3,033 on the Italian map. The notch some distance to the north below that from which we made our ascent, if worthy of the dignity of a name, might be called Colle Fiorito.

* Mr. Tuckett, in *Peaks, Passes, and Glaciers*, Second Series, vol. ii. p. 268, says:—'Their situation is exquisite. Standing on the brow of an extremely precipitous descent, the little village Epinel in the Val de Cogne is seen at a vast depth, surrounded rich meadows and much ploughed land; while immediately front the mass of the Grivola towers up majestically, presenting appearance which in beauty and grandeur reminded me strongly the Jungfrau as seen from Mürren, and comparing by no means disadvantageously with the Queen of the Oberland.'



Tempest Anderson, photo.

THE TOUR D'ARPISSON

From above the Chalets.

Swan Electric Engraving Co.

The way was mainly over moraine and patches of snow, the last part being decidedly steep and very exasperating, as the rocks had been planed down, and gave very little hold for foot or hand, though the work could not be called difficult. We had not put on the rope, and I must own that several times I was glad to catch hold of Pession's proffered axe to haul myself up by, though how he managed to stand firm with twelve stone tugging at him is a still-unsolved problem. When we had once reached the arête a complete and welcome change ensued in the character of the climb. The ridge was struck at the top of the broad couloir with a small patch of snow in it nearly half way up, shown in the illustration. We put on the rope and began a very pleasant rock-scramble. The Tour d'Arpisson consists of a number of towers; perhaps, I should rather say, pinnacles. I fortify myself here with the evidence of my friend, Mr. Compton, and pronounce the number to be seven. We climbed them all, as it was difficult to decide which was the highest. We reached the most westerly in thirty-five minutes without hurry from the notch, and then came to the conclusion that one of the others over which we had crossed was really the highest. We now sat down to eat our lunch and take in the prospect, which amazed both of us as well by its extent as by its brilliance. It supplied one more example of the fact that a little mountain frequently rewards one with a great view. The Tour d'Arpisson cannot for the distant panorama compete with the Pointe de Garin, of which Mr. Compton elsewhere speaks so enthusiastically, but for the Cogne view it is probably better, and certainly takes considerably less time to reach. The great peaks enjoyed the advantage of a fresh vesture of snow, and glistened in extraordinary magnificence. The Grand Combin especially surpassed himself. We saw all the chain of Mont Blanc to perfection; even the usually dark-featured Aiguille du Glacier had donned a white garment. Such a view of the Cogne peaks as next met our eyes I do not think I have ever seen; beginning with the grim Nomenon's perfectly snowless tower, we saw everything right round to the Tour de Grauson, close by us. I will not say more about these kings of Cogne except that, to my mind, our view of the Grivola was far finer than that from the Pointe du Pousset. As we ascended from the Arpisson chalets the summit had seemed to rise higher and higher into the blue sky, and the matchless curve of the north ridge had continued to increase in glory. Pession was enthusiastic. 'This is far better than the Pousset; I wish M. Anderson were here to photograph the panorama.' Beautiful as Cogne looks from

the Pousset, it is, I think, no less beautiful from the Tour d'Arpisson, while from the latter peak the eye sweeps the whole of the Valnontey, from the emerald of the Cogne meadows and the rich dark green of the forest, to the snows of the Col de Grandrou. A good part of the Valeille was also visible, and the whole of the Val de Grauson, monotonous rather than beautiful, lay revealed, with its ruler the Tersiva, and its glacier at its head.

Doubtless, earlier in the season, when the pastures have not lost their fresh green, this valley would be more impressive. There were two curious little glaciers on the Pene Blanche, to the right of the valley as we looked at it. The shining stream of the Valnontey was specially attractive as we lay in the sunshine beneath the 'cærulean pampas of the heavens,' as the latest poet has it. One thing only is needed to make this peak the favourite view-point for all visitors to Cogne, and that is a more desirable route to the summit. This Mr. Compton has found. The way we followed, as I have said, was not pleasant, though, of course, to climbers it presents no difficulty. The part immediately under the notch was stigmatised by Pession as 'Quel sale endroit,' and the lower part of the wide couloir, before we got to the wearisome bit, might at times be dangerous from stones. Anderson tells me that he saw several big blocks fall in part across our track some-time after we had passed. (We were in shade when on the part referred to.) Pession thought that the ascent from the Col de Pila would be decidedly easier than our route, an opinion in which I entirely concur. As to the descent on the Grauson side, the way we followed in 1896 from the Col de Pila was decidedly preferable to the route we took this year, as Mr. Compton's 'times' convincingly prove.

After nearly two hours' enjoyment on our tower, on which, though, as I mentioned before, it is not actually the highest, we built a little cairn, we descended in a slanting direction towards the S.E., keeping the Tersiva straight in front of us. 'You go first,' said Pession, 'and choose the route.' This injunction I had no difficulty in carrying out. The slopes were steep but easy, and we seemed to descend very quickly. Some time after we had taken off the rope, Pession, who had gone on ahead, discovered that we were cut off from the valley, and so we had to make a long traverse to the left. One couloir which we had to cross was distinctly unpleasant, and I was glad of the help of the rope, to which we temporarily had recourse, to get across it. A considerable portion of the skin of my fingers was left behind there, and

The Tour d'Arpisson.

even Pession contributed a little from his stalwart arm. Eventually, as we kept still to the left, Pession scented out a badly marked little track, and we got down to the last cliff's above the Grauson torrent. Edelweiss was fairly plentiful in this part. The upper slopes had been clothed with the grass from which wild hay is made, and were very unpleasant to walk upon. For my own part I prefer ice. After crossing several little streams the track became rather more distinct, and we at last reached the Grauson path just after it crosses the main torrent by a bridge. All the slopes on this side of the Arpisson are unwooded—only in one or two little hollows close to the main torrent did we find a few small pines. When we had reached the proper path we hurried on, and about 20 min. above the bridge, near Moline, found Anderson and Sylvain, who had made a traverse from the Arpisson chalets by way of Gimilian, and spoke enthusiastically of the views which they had enjoyed. It will be plain, I think, from what has been said that if the route to the Col de Pila from the Arpisson chalets is followed and the ascent of the Tour d'Arpisson completed from Cogné, the Tour d'Arpisson's route followed for the return to most resorted to by visitors to Cogné who wish to study in the most enjoyable way Cogné, its mountains, especially its rivola, its valleys, and its mighty and not very far distant neighbours, from the Combin to the Trelatête. The Tour Arpisson has also another advantage over the Pointe du Pisset, in that you may go up by one valley and return by another. Such is the almost latest left of all Cogné's peaks.

ACONCAGUA AND MOUNT ST. ELIAS.

We are very sorry to announce that in consequence of the illness of Mr. A. E. Fitzgerald and of Mr. S. Vines, are both still in Chili, the account of the Expedition to Chilian Andes, which resulted in the splendid conquest of Aconcagua and Tupungata, is necessarily deferred to a later period. With regard to Mount St. Elias we learn from the 'Geographical Journal' for October that after thirty-eight days of travelling H.R.H. the Duke of Abruzzi and his party began the ascent on July 30. On that day a height of 10000 feet was reached. The summit was attained on July 31 without serious difficulty, though the less trained members of the party felt the rarity of the air. The height of the mountain

was found (by mercurial barometer) to be 18,060 feet. Signor V. Sella photographed the panorama from the summit. We offer our hearty congratulations to the Italian climbers on their brilliant success, and regret that our hopes of publishing a summary of the results of their expedition in this number have been disappointed.

HOTEL BILLS, ANCIENT AND MODERN.

By CHARLES MARETT.

THE following table has been compiled from old hotel bills. The prices now are, of course, much higher than they were forty years ago; but then we get much more for our money. There were at that time no carpets, except that there was at the side of the bed a piece of about two square feet. Carpets did not become common until about 1875. There were no reading-rooms or drawing-rooms, though they came into use rather earlier than carpets, and everything was rougher and less comfortable. To illustrate the difference, take Pallanza, where the prices of 1882 were nearly double those of 1857. But the hotel of 1882 was magnificent and luxurious, whilst that of 1857 was, though not exactly uncomfortable, positively ludicrous in its rough simplicity. The bill at Coblenz in 1890 is very much higher than that of 1847; but the hotel of 1890 was much more luxuriously appointed, and the dinner was private and of extraordinary merit—such as could not have been produced in 1847.

The Italian hotels, until about 1870, were very inferior to the Swiss hotels, and the prices were higher.

Forty years ago, travelling at an average of sixty miles a day from England to England and going to the best hotels, but not wasting money, would cost from 17s. to 21s. a day. It would now cost from 21s. to 25s.

The price of breakfast remains unaltered at 1f. 50c. The hotel-keepers are probably aware that a similar meal is supplied in London at from 4d. to 6d., and are therefore afraid to raise the price, which must give a good margin of profit as it is.

	Class of Hotel	Hotel	Bed	Break-fast, Coffee, &c.	Dinner	Service and Bongies
1847						
Hague	4	Turenne	2	1.40	3	—
Coblenz	2	Bellevue	2	1.25	3	—
1854						
Chamonix	3	Royal	2	1.50	4	0.75
Bellagio	4	Genazzini	2.50	1.50	3	1.50
Grindelwald	5	Ours	2	1.25	—	0.75
1857						
Luzern	2	Englischer Hof	2.50	1.50	—	1.50
Pallanza	4	Univers	2	1	3.50	—

	Class of Hotel	Hotel	Bed	Breakfast, Coffee, &c.	Dinner	Service and Bougies
1875						
Luzern	1	Schweitzer Hof	3	1.50	5	—
Grindelwald	3	Aigle Noir	3.50	1.50	5	1.50
Chamonix	3	Union	2.50	1.50	4.50	2
Lausanne	2	Gibbon	3.50	1.50	4.50	1.75
Cadenabbia	1	Bellevue	4	1	5	2
Appenzell	6	Hecht	2	1	2.50	0.60
Heiden	6	—	1	1	1	0.50
1882						
Pallanza	1	Pallanza	3.50	1.50	5	2
Château d'Oex	3	Berthod	2	1.50	3	0
1890						
Coblentz	2	Géant	3.50	2	6.50	1
1894						
Luzern	2	St. Gotthard	4.50	1.50	4	0
Lugano	2	Splendide	4	1.50	5	1
Menaggio	2	Menaggio	5	1.50	5	1
Pontarlier	4	Paris	3	—	3.50	1

The prices are given in francs; where a naught is put for service &c. the price was included in the appartement. The hotels are classed as they were at the time, according to the recollection of the writer.

NEW EXPEDITIONS IN 1897.

[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 existing map before them, and to quote the figures of any measured points of the misleading words 'right' and 'left.' (6) To use always the points of the compass instead of their route may touch. (7) To record their 'times' as brief as possible consistent with the above considerations. (8) To make their descriptions as brief as possible consistent with the above considerations. (9) To write on one side of the page only, leaving a large margin, and to begin a new sheet for each expedition.]

Dauphiné.

PIC D'OLAN BY THE S.E. ARÊTE (3,578 m. = 11,735 feet).—Mr. F. L. Littledale, with Christopher and Etienne traversed this peak, ascending by the ordinary route and descending by the Col des Sellettes. They left La Lavey at 1 A.M., and after spending 1 hr. there they became very high, though not very good climbing; and then the route became very

some distance until they reached a very steep *gendarme*, which they were obliged to descend; in some parts the rocks overhung. Christophe Turc, who was last, had to attach a rope to the rock. This rope was left *in situ*. The rest of the descent was quite easy. They reached the Col des Sellettes about 8.30 and La Bérarde at 8.30 P.M. The expedition would have cost 3 hrs. less if the descent had been made from the Col to La Chapelle, in Val Gaudemar, instead of to La Bérarde.

COL DE GIOBERNEY. *July 12.*—The same party crossed this pass between Les Bans and Mont Gioberney. They slept on the night of July 11 at a shepherd's hut, started at about 3 A.M., and arrived at the Col in about 5 hrs. It was all easy rock-climbing, with the exception of a little glacier at the beginning, until they reached the Col. They descended by the Glacier de la Pilatte, and reached La Bérarde at 1.30 P.M. This pass, as a whole, is quite new; but on July 6, 1878, Mr. Coolidge, with Christian Almer the elder, reached it from the Pilatte glacier when making a reconnaissance of Les Bans.*

COL BOURCET. *July 16.*—The same party crossed this col from the Refuge de l'Alpe to La Bérarde. The pass is immediately to the left of the Pic Bourcet when the ascent is made from the Refuge de l'Alpe. They left the Refuge de l'Alpe at about 2 A.M. and ascended the Pic Bourcet by the ordinary route, reaching the summit in about 7 hrs. They got back to the foot of the peak at about 12 noon, and after waiting half an hour traversed a snowfield, which took about 15 min., and brought them to some rocks which led to the Col. After climbing for another 15 min. they descended by rocks for about 1½ hr., and then over a snowfield which brought them to a moraine leading to the Etançons near La Bérarde, which was reached at 5 P.M.

Graian Alps.

COSTA PARASSEUS (3,215 m. = 10,548 ft., Italian map; 3,218 m. = 10,558 ft., Paganini). *August 9, 1897.*—Mr. G. Yeld, with François Pession, of Val Tournanche, reached the eastern end of the Costa Parasseus from the Goj glacier, and traversed the ridge to its western extremity. About the middle of the ridge they found a ruinous little cairn, but there was nothing on the highest point. Between the ruined cairn and the highest point there was a little interesting rock-work. At the western end of the Costa there is a gap, then a tooth, then another gap, then a big tower, the end of the Tresenta ridge. It was apparent to the party when on the spot that the Bocchetta Goj, crossed by Mr. Yeld with Séraphin Henry, August 19, 1888, was identical with one of these gaps. So that the height of that little pass must be well over 10,000 ft. ('Climbers' Guide' to Mountains of Cogne, pp. 149, 150.)

BECCA DEL DEIR VERD (3,209 m. = 10,529 ft., Italian map;

* A. J. ix. p. 93; *Ann. S.T.D.* 1878, p. 50.

3,230 m. = 10,598 ft. Paganini; and 3,186 m. = 10,458 ft. Italian map, 3,187 m. = 10,457 ft. Paganini). August 10.—The same party, with the addition of Dr. Tempest Anderson and Sylvain Pession, of Val Tournanche, climbed the lower of the above points from the Noaschetta glacier without difficulty, gaining the summit from the W. From it Mr. Yeld and François Pession went along the ridge to the higher point in 15 min., very interesting climbing. The higher point is like a very small Matterhorn, quite startling in its boldness, and certainly deserves a more honourable name than the Roccie del Deir Verd, under which it appears in the 'Climbers' Guide,' p. 149. Becca del Deir Verd has therefore been adopted. The view was extensive and very interesting; the Punta di Gay, for example, appeared in quite a new light.

BECCA DI MONCLAIR (3,544 m. = 11,627 ft., Italian map and Paganini).—The same party, without Dr. Anderson, made a new ascent of this beautiful peak. From the Vittorio Emmanuele hut they crossed the Moncorvé and Monciair glaciers towards the foot of the N. arête of the mountain. Before they reached it they had to cut down a steep slope of ice under some séracs—doubtless a dangerous place in the afternoon—and then reascend over ice and snow to the rocks on the E. side of the ridge. They went up these rocks to the right, and then, after turning considerably to the left, again inclined to the right, and reached the little projection or shoulder—the first that shows prominently in the ridge. (It was the unanimous opinion of the party that it would probably have been better to strike the ridge at its actual foot, and so avoid the passage under the séracs.)

They then ascended the ridge, sometimes actually along it, sometimes on its right, occasionally on its left. The rocks were not firm, and the climbing in places decidedly difficult. The ascent on the whole furnished much interest, not unmixed with excitement. The only part that was unpleasant was on the slope by the big patch of snow, not far below the summit, where the shaly rocks were very annoying. The ascent took about 4½ hrs. actual climbing from the Vittorio Emmanuele hut. The party descended by the N. E. arête to the Col du Charforon, but whereas in 1889 Messrs. Coolidge and Yeld, with young Christian Almer, had been able to go down the very steep snow, on this occasion the ascent was made by the rocks. It occupied a much longer time than the party took 2 hrs. from the summit to the top of the moraine between the Monciair and Moncorvé glaciers.

TOUR D'ARPISSON, circa 10,700 ft.—Mr. G. Yeld and François Pession made this ascent from the Arpisson in the position indicated on the succeeding note, this peak is not identified with the Pointy 3,252 m. on the Italian map, and identified with the more northern Arpisson in the 'Climbers' Guide,' but it is so much more imposing than the point 3,252 that it seems better to retain the name of Arpisson for it, with the slight change of Tour instead of the Arpisson. The ascent was made by a big couloir to the top of the moraine valley) of the peak. The upper part of the couloir was exact

to climb, as the rocks were loose and smooth, though there was no real difficulty—in fact the rope was not put on till the notch to the left of the peak was reached. There the party roped, and, climbing over all the prominent teeth, as they were uncertain which was actually the highest, attained the most western tooth in 95 min. after reaching the ridge. It was then evident that one of the points over which they had climbed was higher than the western one. The descent was made in a N.E. direction. At first it was very easy, but eventually the party found themselves cut off by cliffs, and had to make a long *détour* to the left towards the Grauson huts. Eventually a very faintly-marked track was found, and the Grauson track reached just where it crosses the torrent. This route took a long time, and Mr. Compton's will no doubt be followed by future travellers. It will also be found much better to ascend the peak from the Col de Pila—on its W. side. The Tour d'Arpisson is probably destined to become popular. It is a finer view-point than the much-lauded Pousset, though it does not command as fine a distant panorama as the Pointe de Garin, and has the additional advantage that it can be ascended from one side, and descended on the other. A fuller account will be found on pp. 517-21.

POINTE DE GARIN (8,447 m., 11,810 ft., Italian map); TOUR D'ARPISSON *circa* 10,700.—On August 24, Rev. W. C. Compton and Mr. A. V. Valentine Richards, with Alois and Siegfried Burgener, ascended the Pointe de Garin from Cogne, by the W. arête, *i.e.*, the sky-line as seen from the Valnontey. This arête is not the same as the N.W., ascended by Signor C. Pavese in 1875, which starts from the Col d'Arbole (Italian map—'Col de Garin,' 2,868 m., 9,410 ft., of the 'Climbers' Guide'), and which carries the edge of the glacier on the N. side of the Pointe de Garin. It is reached by rough stones and good ledges leading to a buttress conspicuous from the Arpisson Alp. If the arête be strictly followed after this buttress some good climbing may be found, though the best bits could no doubt be easily avoided. The summit of the Pointe de Garin, reached in 2 hrs. 50 min. from the Arpisson huts, affords a magnificent panorama, and does not appear to have received the attention it deserves as a view-point. Mont Emilius, 8,559 m., 11,677 ft. (Italian map), only obscures the view of a small portion of the Arolla mountains. In every other direction the panorama of the highest Alps is complete, and the isolated position of the peak must make it a far superior point, in regard to the Paradis group and other mountains of Cogne, to the Pousset, which has the honour of being called 'the Gorner Grat of Cogne' in the 'Climbers' Guide.'

The above-named party found a card of Mr. F. W. Oliver, marked 'by W. arête,' see 'Alpine Journal,' xvii. p. 346. They descended the S. arête by very easy rocks to the Col (not indicated on the Italian map), and continuing along the same ridge by turning most of its many gendarmes (to save time)—some on the E. face, others on the W.—they reached [by its W. face, consequently by a different route from that taken by Mr. Yeld—*cf.* note above], in 1 hr. 50 min. from the summit of the Garin, an exceedingly

jagged peak, conspicuous on the sky-line from the valley between Cogne and Lilla, the highest part of the ridge, but not corresponding with the point marked 3,252 on the Italian map. On one of the seven teeth of this peak Mr. Yeld had left a cairn and memorandum of his ascent of it exactly a week previously. Mr. Yeld had mentioned this fact before leaving Cogne a day or so later, and had described it as the Pointe d'Arpisson in the visitors' book. Reference to the Italian map makes it clear that 3,252 is the point at which a considerable rib running down to the Fiorito hut (marked 2,575 m.) impinges upon the S. arête of the Garin, and must be identified with a fine gendarme which the above-named party turned by the W. face, though it appeared quite capable of being traversed. As Mr. Yeld wishes to keep the name Tour d'Arpisson for the jagged peak, and this party agree with him that it has the best title to the name Arpisson, it is suggested that the point 3,252 should be called Punta Fiorito. The Tour d'Arpisson has a face towards the S.E., unsupported by any appreciable buttress, and was noticed as rising distinctly above the rest of the ridge S. of the Garin. It would appear to be about halfway between the points marked 3,252 and 3,088 on the Italian map. From it Cogne was reached in 2 hrs. 10 min. by easy couloirs leading in a S.W. direction from the S. tooth of the Tour to a good path on the side of the Grauson valley, which descends in a direct line upon Gimilian.

Arolla District.

DENTS DES BOUQUETINS (3,848 m.) BY THE E. FACE. August 14.
 With Adolph Andenmatten and Elias Burgener, of Saas Grund directly by the E. face
 the Rev. L. S. Calvert made this ascent snowfields to a point
 From the Col de Bertol they traversed immediately below where
 the foot of the eastern face, which was facing midway between
 appeared to be the highest peak and they then went up some
 the Dent Blanche and the Matterhorn. the right, crossed a narrow
 rocks, and, leaving a hanging glacier on difficult on account of fre
 and steep couloir, which was rather the Matterhorn was direct
 snow. Then, bearing to the left until the face to the tower, whi
 behind, they went straight up the be the summit. From t
 had appeared to them from below to and up a second tower, t
 top of this they saw the cairn on the and found the second to
 descended about 180 ft. into the gap, they sloping downwards; but
 from thence directly to the top. The difficulty, as most of
 needed care, on account of the rocks sloping downwards; but
 this exception and some trouble from the fresh snow, neither
 ascent nor the descent offered serious difficulty, as most of
 rocks were sound, and afforded good foot and hand hold. T
 Left Kurhaus at 2.20 A.M., reached Col de Bertol at 5.55, an
 of rocks at 6.55, summit of first tower at 9.30, and highest
 (3,848 m.) 9.50. Left at 10.30, off rocks at 12.50 P.M., and
 Kurhaus at 4.30. Total halts, 70 min.
 DENT DE ZALLION (11,542 ft.). August 6.—Miss Eth

Wood, with Jean Maitre and Pierre Maurys, guides (from Evolena), made the first ascent of the arête on the Arolla side of the Dent de Zallion. They followed it up from the 'Gazon de la Za' to the summit. They then climbed the Aiguille de la Za by the snow arête, returning by the Col and Plan de Bertol to Arolla. Time, 18 hrs.

MONT COLLON (11,957 ft.), NEW DESCENT.—On August 11 the same party started at 3.15 A.M., went up the Arolla Glacier near the Echo du Collon; then followed a little glacier to the foot of the 'Chancellor.' Turning to the left, they climbed some slippery slabs to the little col to the N. of the Mitre; then ascended the arête and traversed four unnamed peaks, making a signal on each, the last climb being a very stiff one. This brought the party to the Chancellor, and from this peak they took the ordinary way up Mont Collon. The party then made the first descent straight over the snow face and down the rocks between the central buttress and the E. arête on to the Arolla glacier. The hotel was reached in 20 hrs. from start.

Monte Rosa District.

THE BREITHORN (4,171 m. = 13,619 ft.) FROM THE BREITHORN GLETSCHER. July 17.—Messrs. H. J. Mothersill and C. S. Ascher-son, with Ulrich Almer, Christian Kaufmann, and Christian Jossi, jun., made this new route. Leaving the Riffelhaus at 2.20 A.M. they crossed the Gorner glacier in 1 hr. 40 min. to the foot of the Breithorn glacier. This they ascended, keeping near the E. bank in 1 hr. 40 min. to the point 3,355 m. (Swiss map) on the rock wall overhanging the Schwärze glacier. From here they turned slightly W. for a short distance, and then climbed straight up the very steep and broken nevé at the head of the Breithorn glacier to the foot of the wall leading up to the summit ridge, 2½ hrs. This wall, which consists of steep firm rock mixed with short slopes of ice and snow, was climbed in 3 hrs., and the frontier ridge struck some little distance W. of the col, which lies immediately to the W. of point 4,148. Here the route taken in 1884 by Mr. J. S. Anderson with Almer and Pollinger* was joined, and the summit ridge followed for 3 hrs. over two big rock towers and a long snow arête to the highest point, reached at 4.20 P.M. The descent was made by the ordinary route to Zermatt. This route seems to be quite free from falling stones or ice, and though not easy, the firmness of the rocks both below and on the ridge makes it a very enjoyable climb.

Oberland District.

TELLISPITZEN (3,082 m., &c.). August 28.—Messrs. H. V. Reade and P. M. Barnard, with Theodor Kalbermatten, finding the weather too bad for the longer climb which had been planned, turned their attention to this rock-ridge, running S.E. from the Telligletscher to

* *Alpine Journal*, vol. xii., pp. 121, 246.

the Löttschthal. It consists of a succession of rock-towers, some of which are big enough to be considered separate peaks, and presents a formidable appearance from the glacier. No great difficulties, however, were encountered, though the sound rocks afforded $4\frac{1}{2}$ hrs. of varied and excellent climbing, the top of the ridge being followed throughout. The views are fine, and the precipices on the N.E. side surprisingly sheer. The descent was made by easy rocks to the Tellithal, when the ridge broadened out and the climbing ceased to be interesting, a little S.E. of the subsidiary ridge branching off S.W. (well shown on the Siegfried map). Times: Ried to glacier at foot of rocks, $3\frac{1}{2}$ hrs.; to the highest peak (3,082 m.), $2\frac{1}{2}$ hrs.; to the end of the climbing, $2\frac{1}{2}$ hrs.; down to Ried, $1\frac{1}{2}$ hr.; total, $9\frac{1}{2}$ hrs., exclusive of halts.

An entry in the Visitors' Book at Ried, dated August 1888, states that the Tellispitzen, among other peaks, were climbed by M. Montandon and some other members of the S.A.C., but no details are given, and the 1897 party found no traces of a previous ascent on any of the summits. As the route from Lauterbrunnen over the Petersgrat passes round the end of the ridge, the climb may be recommended to any one coming that way who has a few hours to spare.

ANENGRAT. August 30.—In 'A. J.,' xviii. 46, the traverse of the N.W. portion of this ridge, in 1895, was recorded. Mr. H. V. Reade, with Theodor Kalbermatten, and his brother Stephan as porter, completed the climb this year by the ascent of the remaining peaks, the Anenknubel (3,575 m.) and a nameless double-headed peak, both of which are well seen from the Ried hotel. The followed the Löttschenlücke route until about an hour from the of that pass, then bore away to the l. (N.), making for the rocks, the Anenknubel, and reached the top of a few hundred yards S.E. ice-couloir, and a short snow-slope, $\frac{1}{2}$ hr. N.W. of the summit, the point where it was left in 1895, and a double-headed peak, and of the peak. They reached that without difficulty, went in another 15 min. to the first summit of the ridge a little further, 5 min. to the second. After following the ridge a little further they decided that it was needless to continue right on to Löttschenlücke (which could have been done without difficulty about half an hour), and saved time by descending straight to Ebnefluh Firn, whence the Concordia hrs.; to summit, 1 hr. Times: Ried to foot of Anenknubel, 6 in the note on the ridge. A slight correction has to be made in the new point of view recently printed ('A. J.,' xviii. 46). The northernmost and highest this year made it evident that 'the northernmost and highest reached by the 1895 party, which could not then be identified in fact, 3,895 m. of the Mittagshorn, a peak which had previously climbed by Herr Dübi, on the 16th July, 1880, according to Visitors' Book at Ried. The same party in 3 hrs. from Kranzberg, c

KRANZBERG (3,662 m.). August 31. — The same party that no one had recorded an ascent of f the in 3 hrs. from two lower peaks (3,613 m. and 3,662 m.)

cordia hut, but did not follow the easy ridge to the highest point, 3,719 m., which was hidden in clouds, owing to a mistake of the guide, who thought it had actually been attained. It was not until the party had returned to the hut, and the clouds had lifted a little, that they discovered the mistake. A stone-man was found on 3,662 m. The ascent was made by the snow and rocks due S. of 3,618 m., then along the arête to 3,662 m., but there was no climbing worth the name. The E. arête looked quite practicable. *Times*: Hut to foot of peak, 1½ hr.; to 3,618 m., 55 min.; to 3,662 m., 20 min.; down to hut, 2½ hrs. To reach 3,719 m. would probably have taken another 30 or 45 min.

KRANZBERG (3,719 m.)—On August 19, 1896, Mr. C. E. Freeman, with Heinrich Zurflüh and Andreas Stähli, made the first ascent of the Kranzberg. They left the Concordia Hut at 3.45 A.M., and continued on the Jungfrau route for 2½ hrs. till they were near the Roththorn, when they turned south-west up a snow-slope, and in 1 hr. reached a col between a point marked 3,784 on the Siegfried map and the rocky ridge leading to the top of the Kranzberg. Thence the top was gained in 40 min., the ascent, exclusive of halts, taking 4 hrs. 10 min. The descent was made by the Kranzberg Firm without going back to the col, and the Concordia was reached in 2 hrs. There are no difficulties, but the rocks near the top are fairly interesting.

Lepontine Alps.

GALMIHÖRNER (3,017 m., 9,898 ft.). *July 12.*—Mrs. George Broke, Mr. C. M. Thompson, and the Rev. G. Broke left Ulrichen at 8 A.M., and in three hours' going reached, *via* the Blas-Alp, the stone slopes called Kalkenfriedhof, just N. of the foot of the arête which runs down from the ridge between the Blashörner. Just beyond this they slanted up the Blas Glacier, and for two hours traversed snow slopes to the E., crossing the ridges descending from 2,765 m. and 3,000 m., till they reached a third shorter ridge which comes down from a point on the main crest to the N.E. of the summit. They ascended this over rotten, snow-covered rocks for half an hour to the main arête, which was followed for twenty minutes more to the top. No traces of any previous ascent. The descent was made by returning along the crest to a point rather nearer the Pizzo Gallina, and then descending the steep snowface and glacier to the foot of the Gornerli Glacier in 1½ hr., whence Oberwald was reached in 2 hrs. more at 6 P.M.

The N. peak (3,000 m.), which is the only one mentioned in the 'Lepontine Guide,' and which is described by Herr Kamlah as 'a bold peak of shattered rock' ('S.A.C.J.' xxi. 119), could probably be climbed by either its N.W. or N.E. arêtes; but the main ridge between the two points is desperately jagged, and might easily prove impassable. Both peaks and the ridge are in full view from Münster. From the Furka road the true top is hidden by the point 3,000 m., which is generally mistaken for the Blashorn. This latter peak has hardly any real top when fairly viewed in profile.

GROSSE RUCHEN FROM THE WEST.—On August 12 Messrs. E. Calvert and T. Gray, with the guides J. J. Trösch and Joseph Trösch des Melchior, made the first ascent of the Grosse Ruchen by its serrated western ridge. Leaving the S.A.C. Hotel in the Maderanerthal on the preceding afternoon, they examined this ridge from the S. to decide on the best route for making an ascent near its western end. As it was doubtful whether the great towers there could be surmounted, it was decided to strike the ridge E. of these, but, as the upper portion of the south face is extremely steep, it appeared likely that a face traverse of some length would have to be made before the ridge could be gained. This proved to be so.

Starting from the Alp Gnof chalets at 3.25 A.M., they waited on the moraine at the foot of the Alp Gnofer Firn for daylight. Leaving there at 4.40 A.M., they struck across the Firn, up the snow gully at its western head, and took to the rocks just below the great towers, after rounding the bases of which an easterly course was taken for the Ruchen.

A long and rapidly ascending traverse was made on sloping and narrow ledges, the ridge being gained at about a point marked 'Pucher' on the Siegfried map, where there are several large buttress towers. From here a continuation of the ridge brought them to the deep gap which is a distinguishing feature when seen from the Alp Gnof.

The only apparent way of reaching the narrow neck which the connects the ridge with the peak was by descending a long vertical chimney facing it; on account of the looseness of the rocks used care was required in this descent, and the last man had to use a double rope hitched above, and descended by the hand over hand. The Ruchen peak could be still an uncertainty whether the ridge would prove climbed from the gap, and, as a return benighted on as fast as possible, matter of some difficulty, they hastened of the climb proved during a forced return they should be and the summit was reached.

From here, however, the completion of the climb proved difficult than its appearance indicated, doubtless, be very difficult at 12.35 P.M. could, as much time was

The time taken (9 hrs. 10 min.) could, doubtless, be very shortened in a second ascent by this route, as much time was pieced in reconnoitring. snow-ridge and glacie reached in a little

The usual descent by the eastern made, and the Alp Gnof chalets were reached in a little 2 hrs.

Between the Bernina and the Stelvio.

PASSO DI LAGO SPALMO (c. 3,150 m. = 10,335 ft.).
Signor G. Sinigaglia and the Rev. W. A. B. Coolidge
Baroni, P. Rinaldi, and Christian Almer, jr., explored
which does not seem to have been previously visited by
Starting from the Eita Club hut at the head of the

the party mounted W. by the Val Vermolera to the Vermolera huts (55 min.), and then ascended stony grass slopes in a N. W. direction, till by a stony gully they gained the little Lago Spalmo (1¼ hr.). In 1 hr. 5 min. more the crest of the great moraine on the left bank of the Lago Spalmo glacier was attained, and then that glacier mounted, till at its head a broad and steepish snow wall led up to the snowy depression of the pass (1¼ hr., or 5 hrs. from Eita). This lies between the second peak (3,840 mètres) of the Lago Spalmo group on the W. and the point marked 3,223 m. on the 35,600 Italian map (which is rather W. of the point 3,261). It commands a fine view of the Fluchthorn, Piazzì, and Dosdè ranges. Signor Sinigaglia's aneroid barometer (with corrections) made the height 3,150 m.

Mr. Coolidge (being indisposed) and Almer returned in 3 hrs. to Eita by the same route, save that from near the Lago Spalmo lake they descended direct to the Avedo lakes in the Val Vermolera. The rest of the party descended the steep and crevassed glacier on the N. side of the pass, finding the passage of the bergschrund very troublesome, and then regained Eita by way of the peak 3,261 m., the third summit (3,299 m.) of the Lago Spalmo group, and the Avedo Pass.

CIMA DI PIAZZI (3,439 m. = 11,283 ft.). August 2. — Mr. Coolidge and Almer made the ascent of this mysterious summit above Bormio, which though climbed in 1867 by Herr Weilenmann, and a year later by a Mr. Clarke, is rarely visited even by Italian climbers, and has been nearly completely neglected by all others, though it is the loftiest summit between the Bernina and Ortler groups.

Starting from the Eita Club hut the party (hoping to make a short cut on the ordinary route by the Passo di Verva) mounted by the Cassavrolo huts, the slopes above them, and finally by a steep snow couloir, to the depression (Colle Campaccio) between the point 3,029 mètres and the Pizzo Campaccio, 3,148 m. (3½ hrs.). But it was found necessary to descend over the S. Verva glacier and stones for nearly 1,000 feet before the N. Verva glacier could be gained (1 hr.). The rocky barrier on the N. of this glacier was passed some way to the E. of the usual gully, and then the upper snow-field mounted to the S. ridge, which was followed, at the last by a steepish snow slope, to the delicate snowy ridge which forms the summit of the Piazzì. 2 hrs. 20 min. slow walking were taken from the point at which the N. Verva glacier was reached, but not the slightest difficulty was encountered *en route*. The view was extremely fine and extensive.

The return was made by the N. Verva glacier and the Lago Maurignino, the Passo di Verva being reached in 2 hrs. from the peak, and Eita in 1 hr. 20 min. more. This route is by far the easiest and shortest from Eita. A detailed account of this ascent, as well as of the preceding and following expeditions (here indicated but briefly), will later appear in these pages.

CIMA VIOLA (3,384 m. = 11,103 ft.). CIMA DI SAOSEO (3,277 m.

TOFANA DI RAZES (10,550 ft.), FIRST TRAVERSE FROM FALZAREGO.—The same party left the Falzarego Hospice at 4.40 on August 10 and reached the rocks, just below the Col di Bos, at 6.5. A huge buttress projects from the bulk of the Tofana (towards the Col), divided from it by two parallel chimneys in a red crumbling rock. The left was taken at first, then the right gained by climbing round the partition ridge, then up the right (E.) wall of the second, till the neck connecting buttress and mountain, and commanding Val Travernanzen, was reached at 7.20.

Then up the face direct for ten minutes, after which they rounded a projecting shoulder (right), turned into a chimney, crossed it, and passed into it again higher up by a pretty piece of work. The landmarks of this W.S.W. ridge of the Tofana di Razes as seen from, say, the Cinque Torri, are an immense black perpendicular chimney with a narrow grey one running up parallel to the left of it, and over both a high red prominent tower. At 8.25 the wall of this tower stood immediately above the party, below them on the left a great gully running down toward Travernanzen; the alternatives being apparently to traverse the head of the gully or face the wall. However, a traverse was effected south-eastwards, and a point gained from which Falzarego is visible, and shortly after by a chimney and a strip of face-work the top of the tower reached, 8.45. Thence W., just avoiding the gully-head, up ice-chimneys and a glazed watercourse, followed by a long passage of slabs, to a point just below the highest practicable scree-ledge on the main wall. Bearing right in general, they gained, at 9.45, a scharte which for the first time opened the view S.S.E., and finally by a long disagreeable stretch of steep slabs loaded with loose stones, got by the ridge to the top at 10.8. Left peak at 12.32. The descent by the usual way to the Tofana hut took $\frac{3}{4}$ hr., mostly glissading and ledge-jumping.

Total time out, 8 hrs. 36 min. On this, as on the two following expeditions, Arcangelo Dibona, of Cortina, carried up the boots and axes by the old way.

TOFANA DI MEZZO (10,635 ft.), FIRST ASCENT BY THE S.W. WALL.—The same party left the Tofana Hut at 5.10 next day, and followed the ordinary route to within a few minutes of the Forecella. Taking the rocks at 6.22, they climbed slabs steep but good, inclining to the right, and after 20 min. gained a ledge of the great pillar which projects from this face. Following this round still to the right (= roughly S.E.), they struck into a chimney which cuts the pillar, slightly tending back to the left, presently passing out again to the right on the face up to a second ledge, 7.15. The next bit was very hard; you climb round and up a bulging face highly exposed, 7.45. Five minutes later brought them to the top of the pillar, certainly within a hundred feet of the ridge. The next thing was a stiff chimney, entered by a nasty *passo lungo* and barred by an awkward blockstone. Rest at 8.20, within some thirty feet of the crest. The last bit, which begins here, can only be described as extraordinarily difficult—a smooth oblique chimney absolutely

without handholds on the left, and laborious use of back and feet. and the peak at 9.22. Descent by hut.

Only to be negotiated by a most The crest was touched at 9, the old way in an hour to the

The crux of this expedition is a place which may be compared with the worst chimney on the Delago Turm for difficulty, only this is absolutely exposed. The Ampezzo section of the D.O.A.V. proposes to place a few yards of iron rope here and at the other hard bit before described. The route (which, at the guides' suggestion, was named Via Inglese) can be recommended as a very fine climb; it keeps always far left (N.W.) of Messrs. Mackintosh and Heywood's descent with Zangiacomini in 1896.

In the case of each of these Tofana climbs the old way (which is so tedious an ascent that the mountain is hardly done three times a year) makes a delightful descent, glissade nearly all the way. The Tofana hut is admirably convenient as a halting-place if the two climbs are taken in succession.

PELMO FROM FORCELLA FORADA (10,395 ft.), FIRST ASCENT BY THE N. WALL.—The same party slept in deplorable quarters at the Malga Corotto (2 hrs. from S. Vito), and started at 5 A.M. on August 14 for the Pelmo. Forcella Forada 5.50, then over the great spur which bounds the Nevaio di Val d'Arcia on the N., across the Nevaio itself, to a point in the Bergschrund where the snow comes up highest into the rock, a little W. of the Forcella Rossa. The rocks were begun at 8.20. The first passage is of extreme difficulty; a shallow, polished, wide watercourse-chimney, which took forty minutes for a hundred feet. Traversing out of the blocked head of this to the right (= W.), they climbed the face, rather trying and precarious work. A second chimney and more face-work led to a wet red watercourse-basin (9.30), which was traversed to the left. Then up a rib, in fact, this was the below by evidence of recent rock-falls; a part conspicuous from most rotten piece of a climb where almost left, and a line of ugly creacherous. This rib was subsequently a prominent broad ledge formed by the head of a red buttress. The head was left on the right, and the next big ledge gained 10.45, by a climb over a greenish flaked-off face. Leaving this an exposed crumbling light, for some twenty-five yards, along conditions slightly in traverse, then took the face again 11.45; The high snow patch covered after a stiff ten feet of chimney-12, and from this point which assured success, was gained at 11.5, they worked to the pleasant climbing of no particular difficulty identified as falling between the summit-ridge, at a point easily identified which break the strata in two most easterly of the three blocks in twenty minutes of the crest. The top was reached descent made by the ridge ere by the ridge, left at 2.45, and the descent after half-an-hour. Band to the Rifugio Venezia (4.25), and out from the Mal eventually to S. Vito (6.28). Total time Vito, 18½ hrs.

The whole length of rock is surprisingly less than distant view lead one to suppose; it can scarcely exceed 1,400 ft. The general character is ledges strewed with stones, connected by vertical faces and occasional ribs. The climb is interesting and trying because of the extreme caution necessary, but can hardly be recommended as a regular traverse way because of the utter rottenness of the rock. Perhaps a better might be found on the face towards the Forcella Rossa.

PUNTA DELLA MADONNA (9,075 ft.), FIRST DIRECT TRAVERSE FROM THE S.—Messrs. Raynor and Phillimore, with guides Michele Bettega and Antonio Tavernaro of S. Martino, made this expedition on August 22. Leaving S. Martino at 5.10, and following the ordinary Sass Maor route for some 20 min. from the beginning of the rocks, they then struck off to the left—8.30. The way cannot be mistaken, as it is the only real chimney of any length on the S. side of the Punta. The chimney itself is very narrow, shallow-cut, and mainly vertical, consequently not so difficult from falling stones; but the chief difficulty lies in the traverse that leads from it to the continuation line, which is more to the left. The ascent ends in a chimney, the head of which unites with the head of the Winkler-Kamin on the opposite side. The top was reached at 10.40 and left at 11.10, Forcella Rossa between the two peaks 11.85, S. Martino 2.48. Total time out, 9½ hrs. This is a remarkably pretty climb, giving much greater length of chimney than either of the ways from the N.

CIMA DI PRADIDALI, FIRST TRAVERSE FROM S.E. TO N.W. The same party, with Giuseppe Zecchini substituted for Tavernaro, made this traverse on August 25. Till just before the crest it is entirely free from difficulty or interest, but might conveniently be practised in the reverse direction by those who take the Cima Pradidali *en route* by the Passo di Ball, as the Pradidali hut can be reached in under ¼ hr. from the foot. Time from the hut to the top, 1 hr. 50 min.

CAMPANILE DI DRESDA (IN VAL CANALI), FIRST ASCENT AND TRAVERSE.—The same party ascended this virgin point on August 26 from the Canali hut. It shows as a small sharp peak in front of the Sasso Cavallera, and is connected with the Punta della Madonna by a low neck of grass and rock. Leaving the hut at 5.50 they followed the path leading to the Forcella d'Oltro in the valley known as 'I Van della Madonna,' and striking left where this divides, and again up the left side near its head, reached the grassy shoulder covered with dwarf cembra at 7.40. Beginning the rocks at 7.50, after about half an hour's mixed climbing, they succeeded in entering the long chimney which cuts nearly the whole S.W. face of the mountain, but is inaccessible in its lower part. This chimney now afforded a very good climb, being tight and precipitous, and exposed, further complicated by loose stones and rotten rock, and offering several difficult blockstones and projections. It leads to within a few minutes of the top, where the

New Expeditions in 1897.

whole party assembled at 10.30; the character of the chimney necessitates long intervals. A pyramid was erected, and the point christened as above. The descent was begun at 11.25 by an easier way, following the crest in an easterly direction, then 'close' under it on the S., and leaving the rocks close to the little pass known by a local legend, as 'Forcella dello Svries' (spelling doubtful, given phonetically), under the Pala della Madonna, 1 hr. and 20 min. rock work. Hut 2.50. Time out, 9 hrs.

PUNTA AND PALA DEL RIFUGIO, FIRST ASCENT AND TRAVERSE.—The same party on August 27 left the hut at 6.7 to try the point which immediately overhangs the hut itself. Following the path leading to the Forcella delle Mughe (between Sasso Ortiga and Pala della Madonna) they gained the Vallon delle Mughe in about ¾ hr. This remarkable valley is walled on the N.W. (left hand) by an unbroken line of cliff some two miles long and apparently practicable only at one single point. Two chimneys, a vertical and an oblique, start about 40 yds. apart, and unite at about 150 ft. up. Taking the vertical chimney, they began the rocks at 7.18, and by a difficult climb, including a very hard blocked passage, reached the above-mentioned junction at 8.37. Here the chimney widens and presents no exceptional difficulties. Leaving it at 9.40, and taking to the face on the right they gained the crest at 9.40, and followed that to the first peak in 20 min. more. The mountain is a ridge joined to the wall of the Sasso Ortiga by a low neck and rising into two distinct peaks. This first was now named Punta del Rifugio. Starting from it at 11.10, by climbing down the N. face and then coasting by long traverses and finally up again, the second point was touched at 12.5; this was named Pala del Rifugio, and the descent was begun via the Punta, and continued along the main crest to the Forcella between the new peaks and the Sasso Ortiga. Reached 1.45; left 2.00. Along the wall of the Ortiga ran a good ledge which apparently should lead direct to the Forcella delle Mughe. It is broken, however, by a precipice which was only negotiated with the greatest difficulty by climbing down the face and round by a crack where the rope can be attached. The ledge thus regained the Forcella delle Mughe was arrived at by 3.5 and (40 min. halt) the hut b. 5.5. Time out, 10¾ hrs.

Both these climbs are to be recommended as very interesting expeditions throughout; the guides judge them to be the hardest in the group. The heights of both are insignificant, probably below 8,000 ft., and on each the flora is abundant to the p. Both contain, and stand among, rock formations of a bossess remarkable even in the Dolomites. The new names Dresden of the D.O.A. intended as a compliment to the Section up a most attractive province of the S. Martino region.

NORWAY.

Søndmøre.

During the past season Messrs. Gerald Arbuthnot and E. Oppenheim with Johannes Vigdal spent three weeks in exploring the little peninsula which lies to the N. of Øie, between the Hjørundfjord on the W. and the Velledal and Søkkelvfjord on the E. Hitherto this part of the district has been rather neglected, and climbers from Øie have practically confined themselves to the ascent of some half-dozen peaks in the immediate neighbourhood. They made the following expeditions, all of which they believe to be new.

VELLESÆTERHORN (1,448 m. = 4,750 ft.) AND **THE SØNDRE RINGDALSTIND OR URKEDALSTIND** (1,485 m. = 4,870 ft.) July 19.—Left Langesæter at 6.10 A.M. Ascended Vellesæterhorn by a scree gully and easy rocks on S. face, striking the ridge a little W. of the summit (2 hrs. 55 min.). Returned from the summit along the ridge to a point somewhat W. of the top of the gully (80 min.) and descended the glacier on the N.W. face to the Skar (or Col) between the N. ridge of the Vellesæterhorn and the E. ridge of the Urkedalstind (1 hr. 40 min.). Ascended latter peak by the E. ridge (1 hr. 10 min.). The view was in the opinion of the party even finer than that from Slogen. Descended to the Skar and thence to Urke (3 hrs.).

TRANHULSTIND. July 20.—This is a peak to the S.W. of the Nordre Ringdalstind and has no name. It has therefore been called the Tranhulstind. Left Trandalsæter at 7.55 A.M., scrambled up steep grass slopes and rock terraces on W. side of the valley to the glacier which descends into the Trandal from the cliffs W. of the Tranhulstind (2 hrs.). Crossed the glacier, which might be called the Tranhulsbræ, above the lower icefall, and ascended the mountain by a gully in the W. face and by the W.S.W. ridge (2 hrs. 15 min.). Returned the same way to the Sæter (3 hrs. 30 min.).

PASS FROM TRANDAL TO RIKSHEIM. July 24.—Left Trandalsæter 3 A.M. Walked up little side valley between Trandalhatter and the Storevastind (1 hr. 45 min.). Climbed a steep chimney which runs up the face of a nameless point at the head of the valley, turning some of the pitches by the rocks on the N.E. (2 hrs. 20 min.). From here it was necessary to cross to the lower part of the ridge which connects the nameless point with the Molaupfield in order to get on to the glacier on the E. side of the ridge (45 min.). Descended glacier (50 min.) to the little lakes at the head of the Riksheim Valley. The direct pass is further to the N.E., and is between the nameless point and the Storevastind.

STROMSEIMSHORN.—Walked up side valley which lies S.E. of the little lakes (1 hr.), and, ascending the little glacier beneath the W. face of the Stromseimshorn to the Skar in the N. ridge (80 min.), followed the latter to the summit (25 min.). Descended S. ridge (1 hr.). From here to the glacier lakes in Riksheim Valley (1 hr.) and thence to Riksheim (3 hrs.). The view from the Stromseimshorn is very fine. This valley forms the peasants' pass from Riksheim to Trandal.

pedations in 1897.

PASSES FROM URKE TO THE TRANDALS (3 hrs.).
SKAR). August 2.—Left Urke at 7 A.M. (URKEDALSKEAR AND
of the broad gully in the face of the Urkedals glacier. The
Ascended to the Skar. The pass was named the Urkedals short, gully is débris
patches and one difficult, though short, gully comes right
up. On the N. side the amoraine at the foot of the ridge at a point further to the
The pass was named the Urkedals short, gully comes right
(2½ hrs.). Crossed this ridge at a point further to the
splits up into two, forming the E. and N. arêtes.
at a convenient point (45 min.). Thence to Tranda
The above is a very interesting glacier walk. Perh
pass might be called the Trandalskar.

NORDRE RINGDALSTIND (RAANA) BY N.E. RIDGE.
On the Amtkart the Midtre Ringdalstind is mark
locally, this name is given to the northern of the
stinderne, which is also the highest. The Amtkart
to be accurate just here. Tranhulstind is not conn
Midtre, but with the Nordre Ringdalstind; nor is t
connecting it with Elsantind. Raana is about 5,000

The party left Trandalsæter at 11 A.M. (an absurd
followed their tracks of the previous day to the mo
side of Ringdals glacier (3½ hrs.). Climbed to the
ridge (30 min.). Made a little traverse on S.E. face
block and took the ridge. It was easy at first, but s
difficult, and they thought it advisable to make a trave
N.W. face in order to save time. There was a thick m
the rocks were rather moist they found the traverse not ver
and soon returned to the ridge. This was followed to wi
sixty feet of the shoulder, which was turned on the I

From the shoulder to the foot of the final tower the ridg
difficult, though so sharp that a good bit of it had to be
Beneath the final tower they had to turn an overhanging
the N.W. face, entailing a very awkward traverse. They
the ridge and climbed to the summit without difficulty.
Here a small cairn was found, presumably one built some
by Mr. Hastings (K. Randers' 'Søndmøre,' p. 115)
ascended the mountain from Urke. They descended t
the rocky débris and miniature glacier on the S. sid

Although the ridge is short, it is an excellent climb.
BLAABRÆTIND (1,472 m. = 4,828 ft.). August 6.—
heim and Vigdal, starting from Trandalsæter, walked u
slopes and débris between the Storevasting and the Bl
the little valley enclosed by these peaks and the Stro
They then climbed the Blaabrætind by the S. W. rid
occasionally on to the W. face. The summit was re
20 min. from the Sæter (exclusive of halts). They desc
N. ridge in 1 hr. From this point down t
perpetual snowfield), and so back to

1 hr. 45 min. A magnificent view was obtained from the summit.

SKAARTINDER OR S. RIDGE OF THE SÆBØ STORHORN (1,868 m. = 1,487 ft.). *July 29.*—This peak lies to the W. of the Hjørundfjord. Mr. Arbuthnot with Vigdal left the farm Skaargaard at 3.25 A.M. and reached the commencement of the S. ridge in 3 hrs. 50 min. It affords capital climbing in parts, and one can have as much or as little as one likes, since it is always possible to turn difficult parts by the W. face, which is broken up into easy ledges of débris. A very long day would be necessary to complete the whole ridge, even if it were found possible. On this occasion 7½ hours were spent over about one-third of it. Descent to Skaargaard or Sæbø from the summit is merely a walk over débris and patches of snow.

There are still on either side of the Hjørundfjord some peaks to ascend. Some nice passes could be made from this fjord and the Norangsfjord to the Søkkelv Valley, and there are plenty of new routes, some of which should certainly be very well worth doing. The peasantry are quite unspoilt, and the party were received everywhere with great kindness and hospitality. At Øie itself there is a very comfortable and quiet little hotel. The peaks and glaciers are of course small; and none of the above expeditions, with the exception of the N.E. ridge of Raana, which was thought by all concerned to be an uncommonly stiff little climb, presented much difficulty. They were, however, very pleasant and interesting days, amidst most beautiful surroundings, and the party enjoyed the additional pleasure of having the mountains quite to themselves. It seemed to them that no better district could possibly be selected by mountaineers who might wish to climb for the first time without guides, since ample opportunity presents itself of doing work which, though new, is not very difficult, and the expeditions are mostly short. Randers' 'Søndmøre' will be found useful as a general guide-book to the district, and there is now a climbers' book at Øie.

Lofoten Islands.

This district contains few hills higher than 3,500 ft.; but the scenery is most beautiful, and the rock-climbing in Öst Vaagö very interesting. The following notes may be of use to future visitors to the Raftsund.

Messrs. G. Hastings, H. Priestman, and H. Woolley left Digermulen on August 2, crossed the Raftsund, and camped at the head of the Troldfjord.

TROLDSADEL (994 m. = 3,261 ft.).—Leaving the camp at 6.30 the same evening, the party followed the tourist-track to the Troldfjordvatn, passed round the E. end of the lake, and gained the end (1,500 ft.) of the glacier on the N. side of the Stor-Troldtind. They then ascended the main arm of the glacier in W. direction to its highest point, in the hope of finding a route to the rocks of the Store Troldtind above it, but without success.

New Expeditions in 1897.

After supper a descent was made on to a second
between the Store Trolde and a saddle-shaped peak
mile to the W. This glacier was ascended to a height
where the highest snow-slopes ended under a broken
which was reached by very steep rocks.

The summit, where the party arrived just before
1 A.M., lies some distance along the ridge, and shows
any previous visitors. Although too late in the sea
midnight sun, there was plenty of light for rock-clim
the whole night; and from 10 P.M. till 2 A.M. the vie
was a scene of striking and impressive beauty.

The camp was regained at 5 A.M. on the 3rd.
The peak, being unnamed on the new Amtskar
Trolsadel, on account of its shape as seen from the

STORE TROLDTIND (1,046 m. = 3,452 ft.) FROM THE
—Having gained the Troldtind Glacier by the rou
August 2, the same party went due S. up a small
the glacier which falls from the E. side of Store Tro
after ascending a hard snow slope to a height
avoided further step-cutting by taking to the rocks
the slope.

Skirting the E. face of the mountain, they cross ed
snow-slopes to the foot of the S. face of the final peak,
the summit by a series of ledges and gullies in the gra
which are for the most part smooth, rounded slabs on th

On the top was found a cairn, erected in 1890 by the
made the first ascent, and a bottle, containing the name
Jeffrey, of London; Herr Ole Landsund, of Trondhje
native of Digermulen, but no reference to their route.

As they ascended direct from Digermulen, it is probable
ascent was made entirely by the S. face. No other asc
to have been made since 1890.

ISVANTIND (993 m. = 3,061 ft.). August 6.—Leaving
at 11.30 A.M., the same party followed the valley due
Troldfjord to a lake (1,000 ft.), in which small icebergs flo
turning S. on to a ridge of ice-worn granite which lie
the lake and the Troldfjordvatn, followed this ridge w
the foot of the final peak of the Isvandtind. This is b
with very steep granite slabs intersected by ledges and
lined with grass or moss, which rendered great care
The ascent was made by the E. face, and the two p
summit gained at 5.30 P.M. After building a cairn on
of névé falling directly towards the ice-lake. About
the slope a wide crevasse, extending from side to s
party to descend a difficult chimney in the rocks o
after which steps were cut down the lower part
the rocks below; but, after descending to within a f
of the lake, further progress was stopped by a wall
All endeavours to discover a passag

the party were obliged to retrace their steps. The summit was reached again at 12.40, and the camp at 4.20 A.M. on the 7th.

The name given to this hill was suggested by the lake above which it rises. It has no name in the new Amtskart.

LANGSTRANDTIND (CENTRAL PEAK, 8,160 ft., aneroid). August — Leaving Digermulen by boat, the same party crossed to Storv at the N. end of the Oihelsund, and ascended the valley in a W. direction to a col about 2,000 ft. at its head. They descended on the W. of the col to a glacier which drains into a glen to the S.E., and ascended the glacier to the rocks of the central peak. The summit was gained without difficulty, and, although it proved to be the lowest of the group, afforded excellent views of the hills in the S. and W. of Öst Vaagö. The point ascended the most western of the Langstrandtinder, which is visible from Digermulen.

BLAAFJELD (EASTERN PEAK, 8,200 ft., aneroid). August 11. Starting from a camp at the head of the Grundfjord, the same party ascended the Grundfjorddal to the point where the stream forks, and then followed the western branch up to the glacier. Crossing the lower end of the glacier, they struck the lower rocks of the peak, and traversing to the left gradually ascended to the eastern ridge, but were obliged to descend, and to make a détour to turn a rock-tower. The final peak was then ascended mainly by gullies filled with loose débris.

The descent from the E. ridge was made by the S.E. face, past a small lake, marked 840 m. on the new map.

This peak is the lowest of the Blaafield group, and the nearest to the head of the Grundfjord.

SVARTSUNDTIND (1,054 m. = 3,485 ft.). August 15.—The same party left Digermulen at 7.15 A.M., rowed 10 kilometres up the Raftsund, and landed in the little bay called Fallvik. From this place the summit of the Svartsundtind is visible, a little S. of E., above a glacier, from which a stream descends in a series of cascades. Starting at 1.30 P.M., in bad weather, they forced their way up through the deep fern and thick birch scrub on the right bank of the stream to a wall of glaciated slabs of rock which were turned by a long diagonal traverse to the left.

Inclining to the right again they gained the glacier, and ascended it to a well-defined belt of rocks, which separates it from the upper névé. From this point the eastern ridge can be easily reached, but in order to avoid the rock pinnacles on it the party ascended the snow-slope below it till a deep notch was passed, and then had the most interesting and enjoyable scramble up the huge blocks of the ridge to the summit, which was gained at 5.30 P.M.

The descent was made by the same route. Fallvik was reached at 8.10, and Digermulen at 11.30 P.M.

SPITZBERGEN.

FOX GLACIER (RECHERCHE BAY) AND MOUNT FOX (2,400 ft.). This glacier (named after the nearest headland, Fox Point) was

the surrounding ring
Recherche Bay and the
bay.

Dr. Woodman, Captain Stronge, occupied the
Victor H. Gatty left the shore at 3.15
mounted the little valley lying under
which brought them in $\frac{1}{2}$ hr. on to the
a diagonal course was steered up the
covered and enshrouded in mist, but prac
One thousand feet up the mist was left
Mount Fox, 2 hrs. from the shore. Th
point of a long ridge which bounds th
The glacier runs W. from the bay to a lar
by peaks. A second branch, longer a
behind Mount Fox. This branch was
the ridge, from which point Dr. Wood
ascended the peak up a steep slope of
the top at 7.35, and enjoyed a clear
directions, the water only being hidden
about 1,700 ft. below.

At 10 P.M. the whole party again
mounted the N.W. branch of the g
marked snow col at its head. Hei
and little-crevassed glacier on the
small valley leading to the N.W. sh
col was left at 11 P.M. in brilliant su
followed down the glacier, over th
 $1\frac{3}{4}$ hr., to the point at which the
reached at 1.35 A.M., the last 800 f
dense fog.

CUMBERLAND

MOUSE GHYLL, BLEA CRAG,
(about 320 ft.).—On September 3,
Wm. Cecil, and W. E. Slingsby ma
J. W. Robinson described as 'the l
in Cumberland.' It is near the top
Hollows Farm, and is well seen fro
and the Borrowdale Hotel.

It contains a very pretty double
pitchers where the *hymenophylla*
The lower pitch is one of the most
for some distance, it affords little h
account of the wet weather then p
cult. Mr. Cyril Todd led over all
men has here a distinct advantage
The second pitch, which is imme
one, is also a very pretty climb, an
the leader a back and shoulder to s
during the climb a mouse fell

the upper pitch to a ledge 90 feet below, and was afterwards discovered by the boy of the party little or no worse for its rapid descent. This episode naturally suggested a name for the ghyll which has met with the approval of Mr. Robinson. This ghyll will undoubtedly, become a favourite with climbers, and it may fairly be ranked amongst the best of the many excellent rock-climbs in Cumberland.

EASTERN CAUCASUS AND KASBEK GROUP.

Mr. Maurice de Déchy, with the guide Moser, travelled this year in the Eastern Caucasus, to continue the exploring work which he began many years ago. The N. side of the Pirikitelian chain was first visited and crossed to the S., whence the Khevsurian Alps were reached. The N. side of the Pirikitelian chain* was visited in 1889 by the indefatigable Caucasian traveller and explorer, Dr. Radde, but the glacier expeditions and high ascents were not attempted. In 1892 Herr Merzbacher made a long and most successful exploring journey on the S. side of the chain, and ascended some of its highest peaks. The inner Khevsurian Alps remained *terra incognita*.

Mr. de Déchy approached the mountains by the Argun valley, leaving Shatoi on July 12. The journey was favoured, on the whole, with fine weather, only rarely interrupted by short rains with thunder storms, and the travellers moved on without resting. The region is inhabited by the Mohamedan Chechen people. On July 13 Sharoi was reached, and the next day, in a side valley of the Argun, the village of Khulundoi. On the morning of July 15 a hill amongst the Diklos glaciers was ascended to photograph. It was a long day; the party descended again to the Argun valley, and reached (at 9 P.M.) Sundukhoi.

ASCENT OF DATAKH KORT (14,020 ft.).—The next days were devoted to the glaciers in the background of the Donoilam valley. The highest peak of the chain, Datakh Kort, was climbed on July 18 from a bivouac on the rocky slopes at the left side of the Datakh glacier. The party took six hours from their bivouac to the top. The greater part of the ascent was over very steep snow slopes and sharp arêtes, necessitating much step-cutting. In the lower part of the ascent some intervening rock ridges had to be crossed. The porters—who followed to the bivouac, while Mr. de Déchy with Moser went on a photographic excursion—having refused to carry wood, there was no possibility of cooking the provisions, or of making soup or tea. An attempt to make some tea for the ascent, by soaking tea in cold water for a few hours, failed. The travellers were not handicapped through this accident in the ascent, but felt it rather more severely when returning to the bivouac. The porters had already left the evening before, refusing to stay, two of them even not coming as far as the bivouac place. The weather was not favourable on this day, low clouds hanging

* This designation was suggested by Herr Merzbacher. The rivers on the southern slopes of the chain are tributary to the Pirikitelian Alasan.

... and no...
... or no worse...
... because for...
... Mr. Robinson...
... for the...
... climbers, and...
... many excellent rock...

KASBEK GROUP.
... Moser, travelled this...
... the exploring work...
... the Pirikitelian...
... the Khevsurian...
... main was visited...
... in 1880 by...
... explorer, Dr. Radde, but...
... were not attempt...
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over the mountains. Still, the confusion of depths were gained, over snow slopes, which are characteristic of descending the top arête and arriving on clouds broke and the travellers were seen arrived at the tent place. On July 1 Sundukhoi.

KACHULAM GLACIER PASS (11,650 ft.).
July 20 at the head of one of the western Argun river. The next day the glacier passed to Parsma, in the valley of the Kachu glacier is one of the greatest on the mountain range. The snow peaks are magnificent. The pass is and very easy.

July 22.—Up the treeless Alasan valley with high towers. The Christian Tu country. Camp below the Adzunta pass.

July 23.—Crossed this horse pass. From the grass slopes on the N. the Tebulos Massiv is seen, towering over the valley full of wood. Rain with thunderstorms in the evening it cleared up. Camp near some large herds of cattle are driven.

July 24.—Descending to the Khara returned from the huts of a small Tushin only reluctantly followed among whom the party now arrived after hours' wrangling, one horse and a mule. No possibility to get men to carry loads up the head of the Uroshevi valley, from where the party had to give up the Tebulos. The party had to give up the looking ascent. At night Shatil entered the river system previously.

The morning of the next day (July 25) in photographing this most interesting route to be followed in the Khevsurian Alps. No notes exist in the Radde says that no European travel has been made in the mountain recesses. In the afternoon the party descended the magnificent gorges, which, for the steep sides, for the gracious outline of the vegetation, mighty woods, and the abundant flowers, doubt the most splendid defile of the Caucasus. The night was spent at Guro, where the night was spent.

ANATORIS GELE* (about 10,000 ft.)
to the natives over the mountains in the evening. The party turned again to the main valley, following the dreary, stony side valley of the Argun.

New Expedition
... confusion of...
... characteristic of...
... arriving on...
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... On July 1...
... Still, the...
... confusion of...
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... On July 1...
... Still, the...
... confusion of...
... characteristic of...
... arriving on...
... were seen...
... On July 1...

the pass at 6.30 P.M. Camped a few minutes below on the other side. Rain began to fall, and lasted all the night with strong storm. In the afternoon, as the weather cleared up, a fine view over the Tebulos group, the Amugo mountains, and the southern chains, opened from the height of the pass. The mountains in the W. remained overclouded, only an Ushba-like mountain showed his head for a few moments—a beautiful apparition. Late in the night the village of Zinkhadu was reached and the tent pitched. It is out of the question to enter the holes of Khevsur people, which are much dirtier than the huts of the dwellers in the Central Caucasus; compared to them, for instance, the guest-house of the tall chief of Besinghi, of classical fame, looks like a palace.

KALATONIS GELE (10,175 ft.).—On July 28 the party crossed this pass (snowless, like the Anatoris gele), descended to the Kalotanis-zkhali and entered the Arkhotis-zkhali valley. After the party had passed through the villages of Amga, Akhiel, and Chemga, a high camp was pitched near the sources of the Chemgis-zkhali.

SHIBU GELE (11,212 ft.). July 29.—The Shatil men left in the night. They came so far, as nobody could have been procured at Amga or Akhiel, but on the promise that the Starshina would arrive at night with his people. Struggle to get off. Sent down the interpreter. Left at about midday. Crossed the pass late in the day amidst clouds. In the descent remarked that the scenery, which during the last days had been very dull, with no glaciers and small peaks, resumes a greater scale. Camp an hour below the pass, on the slopes falling to the Shanchach valley.

The following morning returned towards the pass to photograph. On this side is a fine glacier, guarded by a broad snow peak, Selis Mta. Shan peak (14,534 ft.) is probably the rocky peak in the chain opposite, rising as a very steep wall from the stony, narrow valley at our feet. No peak was attempted in the Khevsurian Alps, not even the Shan, the highest, although its ascent was on the programme. Mr. de Déchy pressed forwards to succeed with the still good weather in ascending Kasbek, his first aim on this journey.

INKVARI (?) PASS (about 11,200 ft.).—The party did not descend to the bottom of the valley, but crossed over to a glacier-filled gap, which opened at the head of it. They wished to cross over to the Kistinka valley, but great uncertainty reigned about the direction in which to go, and when the pass was already reached, about the locality, which was difficult to identify with the map. The party followed in descending steep grassy slopes, and only discovered when reaching the main valley, which comes from the S., that they were in the valley of the black Aragwa. It was 10 P.M. on July 30—after a very long day—when the travellers arrived at the Kasbek station on the Grusinskaja doroga.

ASCENT OF KASBEK (16,545 ft.).—Without stopping at the Kasbek station, the first place of civilisation and the first bed after three weeks' camping out and continuous travelling, the party left next

1897.

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 lasted all the night
 the weather cleared up
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 grassy slopes, and only discovered
 which comes from the S., that they
 Aragwa. It was 10 P.M. on July 30
 the travellers arrived at the Kasbek

New Expedition

morning, and going straight
 to reach a point, on the
 begin to rise to a rock
 right direction for an ascent
 its right side, where
 happily no notes of the
 hand.) The porters, tur-
 the glacier, declining, apparently, to
 and the travellers had to carry all
 ascending to the camping-place. The
 ascent next day, it was made on August
 ing, the prospects were very uncertain.
 alone, the wood was nearly burnt, and
 longer stay would have been somewhat
 the fear of coming new snow, and
 gether. The travellers started at 5
 to be mounted, then by slopes a desc
 and this crossed to the ice-wall, whi
 the two peaks. Snow was higher
 of the bergschrund was somewhat
 seems to have been from the foot
 peaks, exactly the same as that ta
 Mr. Freshfield and his companion
 easy one, and demands travellers
 indeed, be plainly stated that,
 natives or inexperienced traveller
 The ascent took 8 hrs. The fati
 the high air were severely felt.
 partly account for this. On the
 descent, shortly after leaving the
 travellers failed to find the line
 very critical. The cold, which al
 already - 4° Cels., became intens
 could not hear their own voices;
 were so thick that steps, even a f
 A great rock on the saddle pr
 tion was found. From leaving t
 returning to it, in all more than
 eaten. Nobody was at the tent.
 arrived; they had been sent from
 some anxiety felt as to the party
 for days in such bad weather.
 lasted all the night, the sky wa
 natives could clearly see with our
 ice-wall, and the steps along th
 highest peak. Vladikafkas was
 A large series of photographs
 geological collections made.
 stated, the scenery

tonous, the valleys stony, the peaks comparatively insignificant, glaciers small, and the snow cover in general, despite the height of the ridges, very unimportant. To the mountain E. of the beautiful Shatil gorges, too high praise cannot be given. The rich vegetation, the wood and water in the deeper valleys, the ever-varying configuration of the mountain-sides, the green meadows and the woods, which reach up to the pure white the glaciers in the side valleys, and over them the long, finely shaped, ice-covered peaks, compose landscapes of beauty.

CANADIAN ROCKY MOUNTAINS.

MOUNT LEFROY (c. 11,400 ft.).—On August 3 this mountain was climbed by three parties: (1) Messrs. Fay, Dixon, and Noyes; (2) Messrs. Michael, Thompson, Parker, and Collie; (3) Messrs. Sarbach and Noyes; (4) Messrs. Thompson, Parker, and Collie. The start was made from the chalet at Lake Louise; the glacier was crossed down between Mount Lefroy and Mount Victoria was the col lying between the two peaks, then turning down between 1,500 and 2,000 ft. of steep snow and ice, interstratified with rock, had to be surmounted before the top was reached.

MOUNT VICTORIA (c. 11,500 ft.).—On August 4 a party consisting of Messrs. Fay, Michael, Collie, and Sarbach, succeeded in reaching the top of this peak by a somewhat long climb on the steep slopes from the col mentioned above.

On August 7 the party was joined by Mr. G. E. F. R. proceeded up the Bow valley, camping about a mile below Bow lake. From this point they had intended to explore the snow fields lying in the centre of the Waputtek mountains, but it was possible to climb Mount Balfour (the Mount Daly of Waputtek) to be the highest summit of the group. The weather proved unfavourable, so the camp was moved further up to the shores of the upper Bow lake.

MOUNT ABERDEEN (c. 11,100 ft.).—From here a party consisting of Messrs. Baker, Collie, and Sarbach, ascended this double-headed snow peak was ascended. It lies about 10 miles north of Mount Balfour, and is on the continuation of the Bow range. From the summit an extensive view was obtained of the higher peaks were seen about 30 to 40 miles to the west. The party then returned to the lower Bow lake, intending to explore Mount Balfour from that point, but the weather proved so bad that all that could be accomplished was the exploration of the ice fields that lay at the head of the lower Bow lake. Afterwards returned to Banff.

On August 17 Messrs. Baker, Collie, and Sarbach, returned to Banff. Arrangements for an extended tour of about 4 weeks were made, and on August 20 they ascended a rock peak on the mountain leading north from the head of the Bow valley, west of the Saskatchewan river. On the summit of the mountain

On August 3
 Messrs. Fay, Dixon, this part w
 Messrs. Michael, and Colie. Th
 at Lake Louise. The glacier was
 Mount Vickers a was followed
 snow and following to the b
 weeks, then
 the top w
 On August 4
 Sarrach, and
 party of four
 in reaching
 ridge when
 above.

joined by Mr. G. P. Baker, and
 about a mile below the lower
 intended to explore the large
 (the range, and if
 the group, however,
 the weather, however,
 up was moved further up the valley
 lake.
 10
 August 9 to 4
 and is on the continental divide.
 was ascended. It lies about 3 to 4
 and is on the continental divide.
 view was obtained, and several
 30 to 40 miles to the N.W. The
 lower Bow lake, intending to ascend
 it, but the weather being unmanage-
 was the exploration of the snow and
 of the lower Bow lake. The party

er, Colie, and Sarrach, in the moun-
 tour of about 4 weeks in the distric-
 of exploring the district. On

Continuing on the
 was reached on the
 direction.

MOUNT SARRACH (c. 11,000 ft.).—
 peak in the highest of
 summit 10 was found
 August 10 The camp was base of this
 direction. The Palliser) (c.
 near as possible to the Palliser) (c.
 Forbes of Hector and perfect, but on
 the weather had been perfect, but on
 worse began, rendering climbing on
 However, whilst waiting for the snow
 of Mount Forbes, on August 30 a la-
 of Mount west was explored. At its hee-
 south-west was discovered surrounded
 glacier) was climb one of these (A
 was made to want of time the part
 but owing to reached (c. 10,000 ft.
 highest point lying 30 miles away
 was seen either Mount Bro
 this was 1 an attempt to push
 September 1 an attempt to push
 unsuccessful, and rain, snow, and
 the lower slopes of the mount
 S. W. across the continental divid
 September 3 an ascent was in
 valley, in order to ascertain w
 route through the mountains see
 the north branch of the Kicking
 necessary because the fallen tim
 absolutely prevented the horses
 only outlet from the mountains
 Kicking Horse valley to Field on
 depression in the mountains to
 later on September 6 the part
 pass (c. 6,700 ft.). On the Bah
 camp. On September 9 the Bah
 field from the W. The party
 September 9. The party in the
 During the first week of the
 a plane table survey of the d
 continued by Mr. G. P. Baker d

* Cp. Alpine

The Valley of Zermatt and maps.

With a railway to development of Zermatt there in still increasing opportune, and it is a happy name is indissolubly linked with acquaintance with the locality is indeed, the promised companion work to (already noticed in these pages), and each as a veritable *multum in parvo*.

Mr. Whymper's sketch of the history its rapid strides to notice, will be read compiled by Mr. Coolidge, to which allusion.† This valley, peopled six which was known in much earlier frequented by people of all nations, even in the earlier part of the present earliest English visitors being still a

Those interested in climbing mountaineering history of the great record which would not be complete to many an accident. Nor is one in the title, Mr. Whymper should history of the Matterhorn, and record of success, of death. The tale, memories and to stir new interest.

Whymper's work—differing in this affords reading of continuous interest and passes receive due notice, and chronicled. Mountaineers will curious details concerning the first Whymper has succeeded in unear no means neglected, and we have much useful information respecting clear, practical manner.

Many illustrations, some old, so interest to the work, which include We anticipate for this carefully book a welcome alike from the man for whom the words 'Zermatt' interest, whether from past or present

Robert von Lendenfeld. Aus den Alpen
Paul Hey. Vol. i. Die Westalpen
T. Tempsky. 1896.)

Much has been attempted by the instructive volumes, and much und

ND NOTES.

von L. Ravenstein. Topographisch
Mounted. Scale 1 : 250,000.

ardly adequate, for they include
es of the French and Italian
Stelvio. Herr Ravenstein's
l examination. He ex
untry by Messrs. Bart
emphasising the la
of tints varying with
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at finding the
foot, of the Lake of
Orta green.

fault; he ought to consult the
jection to urge. It is clear that
has been too much even for Herr
of the Swiss Alp and
mountain tarns, except the largest, are
en a darker blue. There is a slight
the colour-printing of a portion of the
have not in all cases been brought
perfection in this respect is unattain-

st of minor inaccuracies. But the
not be shown as passing through
made certain criticisms in detail, as
ctness and emphasis possible, that, as
sents an enormous amount of labour
ments in its compiler and producer,
existence. It may confidently be re-

rs; for it combines in a rare degree
map and a road map. Pains have
mountain inns, and even in some
to the old 'Keller's' and 'Leut-

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result will altogether satisfy the reader must entirely depend upon himself and what he expects.

The general scheme and treatment of the work, aiming as it does at a description of the whole of the Alps 'from end to end,' leads us to look for something still more comprehensive and complete than is perhaps possible in a book based on the author's own observations, and clothed in the shape of a personal narrative.

We must at once admit that to us the principal charm of the volumes consists in the altogether admirable illustrations supplied by Mr. Compton, which alone must give them a permanent value and raise them far above the ordinary class of illustrated works. This artist combines with perfect truthfulness and remarkable freedom from exaggeration the thorough knowledge of his subject possessed only by a mountaineer, and individuality of thought and expression which places him among the foremost of Alpine draughtsmen. May we hope that he will lay the pencil aside for a while for the brush? Too much black and white cannot be of advantage to an artist who has already given great promise in oil and water-colour, and who may yet show that Alpine art is possible. Mr. Hey's drawings, which deal with figure subjects principally, are not so much to our taste, clever as they are; it may be they remind us too much of the unpleasant incidents of Alpine travel—of uncongenial travelling companions, and the like; perhaps they are intended to supply a humorous element—sometimes the border on caricature. With the exception of the two coloured plates the illustrations are on the whole fairly well reproduced, considering that the book is not an expensive one.

The subject matter of the work is extremely well arranged, and extends from the Riviera to the eastern shores of the Adriatic from the Punta dell' Argentera to Terglou, the author making it his object to visit each mountain group of importance, to climb and describe its highest and most prominent summits, and thus to gain and convey a general impression of each district. Much prominence is given to geological features, and the various mountain groups and their general geographical disposition are well defined. A description of the view from the Eggischhorn is used as an opportunity for a long dissertation on the origin and formation of glaciers, and a good deal of interesting historical information is also introduced incidentally. The author begins with an account of the shores of the Mediterranean—interspersed with moral reflections on gambling hells and the origin of soap—and takes us to the Maritime Alps (we wish there had been more about this district) and Monte Viso, then to Dauphiné, the Graians, Mont Blanc, the Grand Combin district, and the Southern Pennines and Monte Rosa. The Lake of Lucerne and neighbourhood are next dealt with, and so on: the Bernese Oberland, the Rhône valley, the sources of the Rhine, the Tödi district, the Italian lakes, the Engadine, and the valley of the Inn. This brings us to the

attempt to describe each valley, though less frequented are not sorry that it should have been climbed, strangely neglected), and their extensive and varied descriptions are always accurate, though they seem to us written not on the lapse of years only; they are like from old sketches—painstaking, and Nothing could illustrate our meaning account of the conditions under which 'surrounded by towering diaries and guide-books, historical works and maps are thus face to face more with the rest of writers than with strong individual impression. The author's own dictation, e.g., to say that 'the two most interesting I assert unhesitatingly, are the Zillertal in Tyrol' (vol. ii. p. 237) is a confession of opinion from which many these valleys are well known will the meaning of a sentence like 'elderly women who give themselves artificial means: they stand not on their own feet' (vol. ii. p. 216)? We further apparent contempt for snow and with the modern school of 'gymnastic' tedious ascent of Mont Blanc (vol. i. p. 125), of Castor and Pollux (vol. i. p. 190), and so on, showing glories of the Alps have not yet expressions of opinion we looked for a really difficult rock-climb, such as on the south side of the Matterhorn are generally chosen; Monte Rosa is an interesting exception, and that as well.

The author crosses the frontiers with relief; he feels more at home in the once apparent in his pages, which visits and a more intimate acquaintance with the valleys, but also with the districts but rarely referred to. We can well understand a native of Austria with regard to the a delightful country to travel in—during the winter season; but the 'pseudo-Alpine' author shun the Dresdener Hut, and found and avoided in that particular of these districts there is a great deal that we had previously found

spitze ascended in winter is particularly happy. But in this part of the work, as well as in the first volume, we could wish for little more conciseness and precision of detail in the description of mountain expeditions, especially as to times; such information would have greatly added to their value. By circumstances of evidence we infer that as a rule the author's times are not fast, we mention this in no spirit of criticism, for our sympathies are altogether with the climber who takes his time over a mountain and enjoys it. But is the author quite fair to some 'members of the A. C.,' who, on his descent from the Matterhorn, look on with 'sneering depreciation' because, as he thinks, the ascent has taken him half an hour more than was necessary? May not the friar who receives him at the entrance of the Schwarzsee hotel and offers him a 'foaming tankard of champagne,' or the 'swarm of schoolgirls who look on shyly and admiringly,' be to some extent answerable for the uncomplimentary looks referred to. Altogether, allusions to foaming 'sec' are not infrequent, and they appear to take the place of the tender references to the climbers' pipes sometimes to be found in the pages of the 'A. J.' On some expeditions guides were taken; others—and we infer the majority, though it is not expressly stated—were done without guides; and we could wish for more information on that point. As a rule, when speaking of the mountains, the author forgets that he is addressing not mountaineers only, but the general public, and the terms 'easy' and 'difficult,' applied in a mountaineering sense, are apt to mislead. Moreover, is he quite candid, and does he take us into his confidence altogether? Has any one who has climbed so much no confessions to make—no tales of misadventures or narrow escapes? If not, he has been singularly fortunate; but, if he has, it would have been better to let the public know something of the dangers and difficulties as well as of the joys of mountain climbing. We have dwelt at length on the mountaineering part of the work, but the portions dealing with towns and sub-Alpine regions are also well worth reading, and full of interesting matter. The book is pleasantly written throughout though here and there we come across an attempt at humour of a kind which we do not quite appreciate. The work is intended for the general reader, not for the specialist, and neither the mountaineer nor the scientific student will look to its pages for anything that is new to him; but it contains a great deal of varied and useful information, and it is a distinct addition to Alpine literature of more than temporary interest.

First Aid to the Injured, with Special Reference to Accidents occurring in the Mountains. By Dr. Oscar Bernhard, Head Physician and Surgeon to the Engadine Hospital, Samaden. (Samaden, 1896.) Translated from the German by Michael G. Foster, M.A., M.D. (Cantab.).

This little book attempts the difficult task of explaining that which can really only be taught by practical demonstration. This, however, the author fully recognises; indeed, he states in his introduc-

tion that the book is freely illustrated by graphic copies from and definite, but some

The book originated with the author at Samaden, Club, and others interested of the Red Cross and the author to publish the reproduction of them in explanatory text, is the result of Alpine Club. Dr. Michael Foster's praise, the verbal errors which fact that the English translation has

On p. 17 the excellent advice is if they must be moved, with curiosity enough, it is recommended unconsciously as a result of effusion of blood into the brain, with or without fracture desirable.

The directions for the treatment of bleeding are plain and simple. (p. 19) before touching an open wound, only carried by travellers, and been mentioned.

The diagrams showing the bandages are clear and explicit, skin by the sun and snow-reflect, at somewhat greater length, taken by those liable to this, while cold compresses as a remedy regard to snow-blindness, sub and blacking the eyelids, might the use of cocain as an alter damage has occurred.

A little more emphasis on the would be advisable. The treatment rather limited, being merely with hot water, firm pressure massage might have been suggested in answer that the after treatment so it should if a doctor can be such a book as this, to draw the treatment.

The article on fractures is clearly the various expedients to Dr. Bernhard states that the

...ularly happy. In this first volume, we could not possibly as to times, and their value. By criticism, for our sympathy takes his time over a from the Matterhorn, as he thinks, the necessary? May of the Schwarze of champagne, or and admiring complimentary 'sec' are of the tender found in the e taken; expressly for more of the mountains, not mountains 'easy' and 'difficult,' mislead. Moreover, his confidence to make no much no confessions narrow escapes? If not, he has been he has, it would have been better of the dangers and difficulties as well climbing. We have dwelt at length on the work, but the portions dealing with are also well worth reading, and full Book is pleasantly written throughout. me across an attempt at humour of appreciate. The work is intended for the specialist, and neither the mount- dent will look to its pages for anything t contains a great deal of varied and a distinct addition to Alpine literature rest.

Special Reference to Accidents occurring in the Bernhard, Head Physician and Surgeon to the n. (Samaden, 1896.) Translated from the

carried on the blood becomes thick and circulation is then entirely interrupted, especially death is then instantaneous.' We do not know this view of the pathology of heat-stroke is put forward to be a new one, and will hardly be generally accepted. But the advice with regard to treatment is simple though more stress might, perhaps, be laid on the use of profuse wetting with cold or, better still, iced water in order to restore consciousness from sunstroke.

The definition of mountain sickness, as occurring on climbing mountains of 10,000 ft. or upwards, is correct. The last section of the book, on transport and travel, is altogether excellent. It is full of practical suggestions and the best method of transporting injured persons, according to the circumstances under which they have met with their accidents. The illustrations are numerous and clear, and should enable the reader to make the most of the resources at his command. It is to be regretted that it is not to his advantage in transport to have a wounded man down a mountain-side, especially if there are no porters and only a few men available. They will then wish to have had Dr. Bernhard's excellent little book with them, which they had made themselves thoroughly familiar with in

ALPINE ACCIDENTS IN 1897.

A SECOND season of bad weather in the Alps has been the cause of a number of accidents exceeding the record of any previous year. To one feature in this long catalogue we think prominently deserving to be given. No member of our Club is found on the fatal list, and of the two Englishmen who died in the mountains was a lad of 16, who was taken by his Swiss tutor on a tour without guides, of the Mont Pleureur (12,159 ft.), on an exacting task for one of such years; while the other, an elderly man, disappeared in a way with which clearly he was plainly nothing to do.

In this connection, though we do not forget the calamities of the years, nor pretend that the risks of mountaineering can be eliminated by any amount of care and foresight, we can point with satisfaction to the obvious result of the advice given to the leading English climbers, past and present, who have set their faces against the tendency to depreciate and disregard the dangers of the mountains—a tendency which has unfortunately become but too common in some quarters.

It would be tedious and unprofitable to give details of the numerous catastrophes, Alpine and sub-Alpine, which have been chronicled in Continental papers. One statement in The 'Journal de Genève' of September—

Alpine Accidents

134 persons had been killed in Switzerland. We shall notice only the fatal small. line, and such others as seem to call for a reason.

TABLE OF CHIEF ACCIDENTS

Date	Name	Place	Loss
June 18	R. Schmidt	Zugspitze	One
July 18	F. Oechliena	Rocca Bernauda	One
Aug. 6	Descaldi	Mortersatsch Glacier	One
Aug. 15	Bernard	Roche Melon	One
Aug. 26	Andreas Anderegg	Jungfrau	Two
Sept. 1	Johann Anderegg	Mont Pleureur	Four
	Gonin		
	De Mollins		
	Bischoff		
	Swinstead		

ACCIDENT ON THE JUNGFRAU.

We take from the columns of the 'Alpina' of Oecchi the following account of the Jungfrau accident, which was Mr. Andreas Fischer, late of Grindelwald, and originally the 'Bund':— 'Herr Simon Bein, of Frauenbrunn, Saxo guides Andreas and Johann Bein, of the same purpose to the Bergli Club hut, with the intention of ascending the ordinary well-known route over the leading guide, Andreas frau (other parties were at the hut for the same purpose and even on the Mönchjoch expedition. New expressed doubts about the route, and in Chamoni, he, "might seize upon the Jungfrau." "The avalanche which the snow plays. He was, as everybody knows, Melchior, and was as well had by that distinguished father. Better training could not be. He liked everybody, and in his last expedition, for is prudent, and really the courteous and pleasant character, and in Chamoni, Zermatt as in the Oberland, when he returned, he was advised, as he was, to be really the firm and even on return when return to when, as the party was abandoned. The little party to the left to descend the (false) Kranzberg to the hundred regarded as safe, hut. The travellers stepped on a dull cracking surface on which they were standing sound broke—that is to say wide curve, with a dull cracking sound broke—that is to say and immediately carried away the unfortunate.

...circulates with difficulty, especially in the brain. We do not know on what grounds heat-stroke is put forward. It appears to be generally accepted as correct treatment is simple and sensible. To be laid on the necessity for perspiration, iced water in cases of weakness, as occurring only when the temperature is higher, and probably lower elevation. Transport and transport materials of practical suggestions for the persons, according to the circumstances, should enable any climber to meet with their accident. The climber should be in his command. How necessary it is in transport that experience has been obliged to get a book, especially if there be no path, they will then wish they either had a book with them or at least that they were familiar with its contents.

TS IN 1897.

The Alps has been marked by a record of any previous year. We think prominence should be given to the fact that our Club is found upon the mountain who died in the Alps one of his Swiss tutor on an ascent, (12,159 ft.), obviously an accident, while the other, Mr. Cooper, was with which climbing had

forget the calamities of past years. Better training could not be. He liked everybody, and in Chamoni, Zermatt as in the Oberland, when he returned, he was advised, as he was, to be really the firm and even on return when return to when, as the party was abandoned. The little party to the left to descend the (false) Kranzberg to the hundred regarded as safe, hut. The travellers stepped on a dull cracking surface on which they were standing sound broke—that is to say wide curve, with a dull cracking sound broke—that is to say and immediately carried away the unfortunate.

able to give details of the b-Alpine, which have been the statement we reproduce. It states that up to that date

'A second more numerous party had followed distance. The first man in it was also carried by his companions held him up. They at once set those who had disappeared in the snow. Mr. F. completely buried, and was still alive. The two guides in half an hour, both dead. Johann Anderegg's and Andreas showed no injuries. He had been suffocated by the snow.

'Three of Andreas's brothers who were at Zermatt met the sad procession on the Aletsch Glacier. the news at the Monte Rosa hut) hurried to the E.

'Old Melchior, with another of his sons, had just met the sad procession on the Aletsch Glacier. Wetterhorn with Mr. C. E. Mathews, whose guide was so many years. They learnt what had happened on Grindelwald.

'At the funeral, which took place on Saturday, Meiringen, the widest and most profound sympathy was shown for the deceased.

'Andreas Anderegg leaves a widow and two sons. Johann, the younger, was the only support of his father. He had but recently adopted the profession of guide.

The appeal of Mr. C. E. Mathews for subscriptions to the Alpine Journal has been very liberally responded to. The names of the two guides has been very liberally responded to. The names of the two guides will be seen from the slip inserted in this number.

ACCIDENT ON THE MONT PLEUREUR.

We take the following description from the 'Alpina' of the first of the two parties:—

'On September 1 seven travellers and a porter started for the ascent of Mont Pleureur. They divided into two parties of four each, the first consisting of three pupils of the Lycée of Sion, MM. Ritz, Zimmermann, Delaloye, and the porter Bournissen, the second of M. pasteur à Sion, M. Bischoff, a young Englishman, Mr. Mollins, who acted as leader. The second party followed at a sufficient distance to be out of reach of the piece of snow sent down by step-cutting.

'When we [the first party] had arrived at a certain height how good the snow was, we shouted to them that we were climbing La Salle on the way, and to follow the ridge which it with Mont Pleureur. "All right," one of them replied minutes afterwards we reached the highest rocks of the giving a very steep couloir on our left a wide berth. We breakfast on a rocky platform we suddenly heard a dull which seemed to come from below us. We got up and ran the edge of the precipice just as our companions disappeared in a whirlwind of snow and stones in the giddy couloir which just avoided.

'The party at once descended and discovered that in

later in the presence of the captain of Bernard's battery, and MM. Guy de Valence and A. Chambre, the French climbers, who had kindly lent their guides. The guides, Auguste Clapier and his brother, Louis Faure, and Joseph Amiez, are highly praised for their conduct.

In an accident on the Hochswab a party left an exhausted companion alone while they continued on their way to the hut; they then sent a guide to him, who assisted him some distance further, but left him again exhausted, and returned to the hut. When he went back with help the unfortunate traveller had disappeared. The body was not found till three days later. Of the two experienced travellers who had so narrow an escape on the Schreckhorn one had lost his axe, and so was unable to hold up his companion, who was descending in front of him. The large guideless caravan on the Grosser Buchstein, when Herr P. Goudet, of Geneva, was killed, were roped in parties of two each. A party descending from the Mönchjoch to the Eggischhorn were unroped; the guide, with the rope coiled up on his back, was examining a snow-bridge. It broke under him, and he fell into the crevasse. He was rescued with difficulty. Can it be wondered that accidents happen?

The moral is, as it has so often been before, that no precautions ought to be neglected, especially in a bad season. No party should attempt an ascent such as will be a severe tax on their power, unless they have the necessary experience, are in proper number, and, should they not be accomplished climbers, are attended by trustworthy guides. No traveller should be left alone when exhausted. In the case of treacherous snow, when an experienced guide is of the party, his opinion should be asked, and if he is doubtful as to the prudence of the ascent the expedition should be abandoned. For glacier expeditions less than three is no party. We all deeply regret that the mountains have claimed many victims in 1897, but it is clear that needful precautions have been, one might almost say, consistently neglected, otherwise the black list would have been much shorter. We may quote again lines once so aptly cited by a former President of the Club:—

The little more, and how much it is,
And the little less, and what worlds away.

No doubt there are accidents in the proper sense of the word, but we think it is clear that, had due care been exercised, the large majority of so-called accidents of the present year would never have happened.

ALPINE NOTES.

A FORTHCOMING BIBLIOGRAPHY OF TRAVELS IN SWITZERLAND.
Our readers are doubtless aware that the Swiss Federal Government

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OF TRAVELS IN SWITZERLAND—
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on (through K. J. Wyss, of Bern
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aspects. This is divided into sections, which are issue
pendently as they are ready. Two of these are especially i
ing to mountaineers. The publication of that (No. ii.) deali
Maps, Plans, Reliefs, and Panoramas, was begun in 1892, a
several parts issued, with many additions, &c., in a single
of over 700 pages in 1896. No. iii. is to be devoted to Geogr
Descriptions, Narratives of Travels, strictly mountaineering
(all concerning Switzerland only), &c., and has been in acti
paration for some years past by Herr A. Wäber-Lindt, fo
editor of the Swiss 'Jahrbuch,' and joint editor of the new
of G. Studer's 'Ueber Eis und Schnee' (the second volu
which is now in course of revision). We believe that th
fatigable author has several thousand slips of titles of work
included in his list, and it is certain that the book will be as
complete and exhaustive as is possible in such a wide field
understand that the work will comprise twenty-five sheets
(the elaborate index covers two sheets to itself), and tha
Wäber hopes to issue the book complete in the spring of 189
have been permitted to see the first six sheets in type, a
assure our readers that they will not be disappointed wh
result of the unwearied labours of so competent a writer is i
hands.

THE ACCIDENT OF 1866 ON THE ANCIEN PASSAGE.—So
mains of Captain Arkwright, who was killed by an av
on the Ancien Passage on October 13, 1866, were found by a
of guides near the left bank of the Glacier des Bosses
August 22. They were easily identified, as a pocket-hand
bore his name in full; and further search discovered oth
tions of the body, his alpenstock, and other articles. It
remembered that the corpses of the guides, victims of the
suicidal rashness, were recovered after the accident: C
Arkwright alone was buried so deeply in the snow by a
avalanche as to be irrecoverable. The Chamonix author
once communicated with his family, several members of
came over from England, and the remains were laid to res
English churchyard on August 31, beside the grave of M
Nettleship, who perished on Mont Blanc in 1892 under
stances even more painful, which are probably freshly reme
Nearly all Chamonix attended the funeral, a large num
guides in procession preceding the coffin, and the general
of sympathy and respect was most marked—with one ex
or perhaps one ought to say two. Somebody managed to
couple of photographs of the remains first found, while the
were gone down, as in duty bound, to report their discov
promptly exposed them for sale in the shops. Nor coul
induced to withdraw these, which had no interest except the m
horrible, or to give up the negatives, until Captain Ark
brothers had paid a considerable sum to redeem them. A
Chamonix paper, not content with publishing a couple of c
professedly scientific, giving minute details as to the vario

tures and other injuries, promised its readers a picture of remains. On pressure from the town authorities, at the instance of the Arkwright family, this was abandoned, and the following note was inserted instead:—

'Avis.—Nous avons promis à nos lecteurs une vue des principes restes découverts au Glacier des Bossons. Au moment de mettre sous presse la gravure que nous en avons fait exécuter, nous sommes informés que **M. le Colonel Arkwright s'oppose formellement à cette publication.** Nous ne pouvons que déférer à cette injonction, mais nous userons du droit strict que nous possédons de remettre à nos amis, individuellement, des épreuves de notre gravure qui, d'ailleurs, ne présente absolument rien d'inconvenant.'

We are too familiar with the manner in which the glacier treats its victims to be able to learn anything from reading a description of the mutilations of Captain Arkwright's body: it is only a penny-a-liner, seeking to gloss over his liking for the horrible, who would call them a highly interesting scientific document. But the circumstances and accessories found may be described without wounding natural feelings of humanity, and they give a more striking illustration of the caprice of the glacier, in preserving some fragile things which break others with extraordinary force, than even the relics of Dr. Hamel's accident, which we have all seen. I should add that the brother, Colonel Arkwright, showed these articles to me at Chamonix, and to no one else outside the family, and that I gave this account of them to the 'Alpine Journal' with his concurrence.

The alpenstock, an ordinary fir sapling shod at the thicker end which had been bent to breaking at several points, while the wood was saturated with moisture, and a piece of the upper end had broken off. As the wood dried on coming to the air it stiffened in its bent form, so as to present a singularly crippled appearance. The spike had dropped out as the wood dried: it was a little bent but very slightly rusted; the iron ring remained in place on the pole. The pocket-handkerchief was intact, the coloured border scarcely faded, and the marking (in ink) quite perfect. The shirt had been torn to pieces, but two of the studs and the collar-studs somewhat elaborate in pattern and therefore easily to be injured were found intact in the button-holes. A cartridge, doubtless gotten in the pocket of his shooting-jacket, was found there, with the paper reduced to pulp, but the shot still in it. There was a gold pencil-case, which would still open and shut, with lead that would still mark. Most remarkable of all was the watch-chain made of solid gold links perfectly plain. Not a scratch was visible and the gold was as clean as if it had been just rubbed up with wear. He had left his watch behind with the relatives who accompanied him to Chamonix, and in place of it had put on his chain a ring to which were attached a couple of keys: these, unlike the alpenstock spike, were rusted almost away. The portion of the rope with which Captain Arkwright was attached to the guide was also found—a loop tied in an ordinary hard knot. It

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an ordinary hard knot. It had

broken, doubtless at the time of the accident, one end at
the other end some inches away. The loop itself had be
worn through in two places six or seven inches apart—
very recently, as the detached piece was found close to the

HEREFORD B. G.

TWO NEW ALPINE CARRIAGE ROADS.—During the past
I chanced to visit two passes over which carriage ro
shortly be carried, thus almost completing the immense n
such roads in Switzerland. The road over the *Klaus*
(1,952 m., 6,404 ft.) between the Linththal and Aldtorf
in progress for some years, and portions of it, especially
Glarus side and on the Urnerboden plain, are nearly
Little has, however, been yet done near the summit of t
and it is improbable that the road will be completed before
1900. The other pass is the *Umbrail Pass* (or Wormser
tween the Stelvio road and the Swiss Münsterthal. B
construction of the road over the Stelvio (1820-4) the Um
the ordinary route from the Adda valley to the Etsch va
even now over a great portion of it there is a rough c
which becomes a bad mule path in the lower reach of
Muranza. This pass was visited in August 1897 by so
Swiss officials, who (it is understood) intend to report fa
as to the scheme for constructing a good road across it
at the cost of the Confederation. This, no doubt, will ta
years, but the proposed road when completed will form a r
ful link between the Stelvio and (by way of the road
Ofen Pass) the Lower Engadine. The Umbrail is 2
(8,242 ft.) in height, so that it will displace the Furka,
(7,993 ft.), as the highest road in Switzerland, though it
lag behind the Stelvio (2,760 m.) and Galibier (2,658 m.)
the Alps.

W. A. B. COO

DEATH OF DR. E. VON MOJSISOVICS.—We regret to
announce the death of Dr. E. von Mojsisovics, an honorary
of the Alpine Club. He died at the end of August last at L
in Styria. We hope to publish an In Memoriam notice
February number of the 'Alpine Journal.'

LIBRARY.—The following additions have been ma
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THE SHAM SWISS GUIDE.—On October 19 a circular was issued by the Committee warning members against a swindler calling himself Mütznér, who was passing himself off to those interested in Alpine matters as a Swiss guide. In it, any member who should come across this man was requested to at once give him in charge of the police, as a warrant had been taken out against him in the city of London, and the Club were proposing to prosecute him.

The sequel to this warning was not long delayed, but its end has been unexpectedly tragical.

On October 24 he came to the house of a member living in one of the south coast towns. He was recognised, as answering the description in the circular, was given in charge of the police, and the City police were communicated with, but though visited, as usual, in the police cell, he committed suicide during the evening by hanging himself.

This man had never been a guide; it seems probable that, as he stated, he did come from Meiringen or its neighbourhood, and perhaps he had at some time acted occasionally as a porter.

A few years ago he victimised a large number of members of the various foreign Alpine clubs, and his proceedings were fully commented on in their periodicals at the time.

His operations commenced in England some three or more years ago, and during this time have extended to almost every county in England, Wales, and Scotland. His tale was almost always of a very similar nature, and such is the sympathy of those interested in the Alps for their inhabitants when thought to be in distress, that he was rarely unsuccessful.

How he obtained the names of those likely to take an interest in the fortunes of a Swiss guide has not been ascertained; he certainly

did not confine his operations to members of the Club only, but it seems likely that by some means he obtained possession of a Club list, as the names he used as his supposed employers were almost always those of officers of the Club, and therefore likely to be well known to those he was begging from. It seems incredible now that he could pursue his course of fraud so long without detection.

PRESENTS TO THE CLUB.—Mr. Justice Wills has presented to the Club a complete set of newspaper cuttings relating to the 1865 Matterhorn accident, and also a set of cuttings containing the reviews of his books 'Wanderings among the High Alps' and 'The Eagle's Nest;' also a portrait of his guide Auguste Balmat, and another of himself and Balmat, which latter is interesting as showing the short-handled ice-axe then in use.

ARARAT.—We take the following from the 'Daily Chronicle' of October 12, 1897:—'St. Petersburg, October 11. The newspapers announce that during the ascent of Mount Ararat by the members of the recent Geological Congress, one of the party, M. Stoeber, professor of medicine, from Vladikavkas, was frozen to death.'

SEL GILL POT HOLE, PENYGHENT, YORKSHIRE.—On September 18 and 19 Messrs. E. Calvert, F. Ellet, Percy Lund, T. Gray, W. C. Slingsby, and B. Mason made, by means of rope ladders, the first descent of the three great pitches of which the above-named pot principally consists, and explored numerous wet and dry passages and some enormous caverns, one of which was large enough to contain an ordinary parish church, and steeple too. During the exploration a weird subterranean waterfall, of about 100 ft. in height, was seen both from above and below, and the falling water added a deep diapason tone, which was quite in keeping with the surroundings. Some passages were not explored for want of time.

Underground mountaineering possesses an indescribable charm of its own, which is quite different from Alpine climbing, and it demands quite as much, if not more, nerve than the latter, and rope ladders are apt to play funny pranks when used by a novice.

SPITZBERGEN. MT. MARMIER.—It may serve to prevent future confusion to point out that the Mt. Marmier shown in Sir W. M. Conway's recent map of part of Spitzbergen ('Geo. Journal,' vol. ix., No. 4) is not the peak lying to the N. of Mt. Lusitania, the ascent of which was described under that name ('Alpine Journal,' vol. xvii., p. 815), but is the hill shown as Viking Hill in the sketch map ('Alpine Journal,' vol. xvii., p. 810). The Flower Valley of Sir W. M. Conway's map, (running N.W. from Mt. Lusitania) is shown as Reindeer Valley in the above-mentioned sketch map.

VICTOR H. GATTY.

THE DISAPPEARANCE OF MR. COOPER AT ZERMATT.—We learn just before going to press that the body of Mr. Cooper has been found in a lonely wood between Zermatt and Täsch. Rev. F. T. Wethered informs us that it was in the forest of the Tufteren Alp. He had, to judge by appearances, fallen, from a rock above—a distance of 15 metres. His money and articles of value were found

on the body. We are very glad that all suspicion of foul play has thus been removed.

FATAL ACCIDENT ON THE WETTERHORN.—We deeply regret, at the moment of going to press, to receive the news of a fatal accident on the Wetterhorn. On Saturday, November 6, three young fellows left Bern to make the ascent of the Wetterhorn, one of them the son of Herr Wäber-Lindt, formerly so well known as editor of the Swiss 'Jahrbuch,' and now as joint editor of the new edition of Studer's 'Ueber Eis und Schnee.' The party slept at the Gleckstein hut on the night of November 6, and on the 7th attained the summit in safety. On the way down they had reached a point below the 'Sattel,' near the edge of the great couloir, and then imprudently (for the survivors allow that they had seen rocks fall there, and the mountain is absolutely snowless just now) sat down to take off their crampons. A stone whizzed through the air and struck the unfortunate young Wäber-Lindt, fracturing his skull. He lived some hours, but died on the mountain on the night of November 7. We may mention that one of the two survivors was a doctor. The body was brought down on November 8 by a rescue party. A guide would doubtless have warned the young travellers of the dangerous character of the spot where the accident happened. It is very sad that after so successful an ascent the expedition should have ended so tragically.

THE NEW EDITION OF MR. BALL'S 'ALPINE GUIDE.'—We hear from Mr. Coolidge that about three-quarters of the first volume is already in type, and that by the end of November the whole of the volume will be completed.

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PRINTED BY
 SPOTTISWOODE AND CO., NEW-STREET SQUARE
 LONDON

JUN 11 1937

