

THE
ALPINE JOURNAL:

A RECORD OF MOUNTAIN ADVENTURE

AND

SCIENTIFIC OBSERVATION

BY MEMBERS OF THE ALPINE CLUB.

VOL. XIII.

AUGUST 1886 TO MAY 1888.

(Nos. 93-100.)

EDITED BY W. A. B. COOLIDGE.

LONDON:
LONGMANS, GREEN, AND CO.

AND NEW YORK: 15 EAST 16th STREET.

1888.

PRINTED BY
SPOTTISWOODE AND CO., NEW-STREET SQUARE
LONDON

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THE
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AUGUST 1886.

CLIMBING AND BREATHING AT HIGH ALTITUDES.

By WILLIAM MARCET.

(Read before the Alpine Club, March 2, 1886.)

ON taking from some lofty peak a bird's-eye view of the so-called 'climbers,' you will see what I conceive to be four classes of men, all of them fired with the motto 'Excelsior.' The first includes, I am afraid, a no small proportion of those who aspire to alpine fame. They are met with lounging about the precincts of the hotels at Chamonix, Zermatt, or Grindelwald; they wear shining boots with something of the patent about them, new leather gaiters, felt headgear with a coloured ribbon, and a greenish-coloured jacket; indeed they are somewhat green all over. They inquire anxiously as to what summit remains to be won, will go anywhere and everywhere, require the most intrepid guides, and will be contented with nothing short of hair-breadth escapes; they are fire and flame, but, as a friend of mine used to say, shoot up like a rocket and come down like a stick.

The second class of climbers are of a milder and more sober type. Young and inexperienced, they resort to the Alps because they have heard of their beauty, they thirst to reach the realms of everlasting ice and snow in which our Club so justly delights, and are fired with an ardent desire to look down from those peaks and lofty summits which, always young, laugh at poor human nature as it grows old and infirm. Such is, indeed, the beginning of genuine climbers, destined some day to be foremost among those of their kind; but they overestimate their powers, and often after a first season leave better and wiser men, with a stock of knowledge to be turned later to good account. Let me recall a case in point. Coming down from Monte Rosa I

met a young English gentleman on the Gorner Grat path. He stopped me and inquired whether the ascent of Monte Rosa was difficult. His guide lost not a minute in circumventing my own, and loquaciously used his powers of persuasion, of course, in his own interest. My reply clearly appeared satisfactory to my new acquaintance, and the next morning, before dawn of day, saw him and his guide bound for the Dufour Spitze. I happened to meet this gentleman at Zermatt the same evening; he had not gone beyond the foot of the final arête, and in reply to my question said he had quite forgotten to have nails driven into the soles of his shoes.

The third class of climbers are those who adorn the roll of the Alpine Club; they are old hands, whom the love of nature, the passion for independence, the 'don't-care-for a formal mode of existence,' and the excitement of adventure drive out every summer to some favourite alpine haunt. They are pleasant companions, the life and fun of alpine hotels, and go home with a rich harvest of exploits, peaks and passes won by the sweat of their brows.

There is a fourth class of climbers who combine a love of alpine existence with some other pursuit to be carried on in the mountains only. Many are botanists; some are geographers, as was our old lamented friend, Mr. Adams Reilly. Some, enraptured with the magnificence of alpine scenery, think of little else but becoming possessed of it in a tangible form—such are Loppé, Williams, and others. Alpine painters are now many and very varied in their productions. Others, caring, perhaps, less for artistic colour than for beauty and accuracy of form, on the principle that nothing can surpass nature in its solemn nude aspect, bring back lovely photographs from a summer campaign, and our Honorary Secretary, Mr. Donkin, has shown us to what degree of perfection alpine photography can be carried. The author of this paper may perhaps be considered as one of this class; he does not collect plants or make maps, neither does he paint or photograph; but like others bent on some especial object he has his stock in trade, his impedimenta, which are indeed heavy and cumbersome, and he sets himself to work on some physical or physiological question, inquiring into the state of the body in the cold and frosty light atmosphere of the upper regions, where food is scanty, limbs tired, and sleep insufficient. Considerations of this kind, on becoming the subject of a paper such as this one, should be clothed in the proper alpine garb; but how is it to

be done? Can 'the Ethiopian change his skin or the leopard his spots?' How can I address you, even if it were in my power (which is far from being the case) with the fun and ready humour of our friend Mr. Dent, or speak with the wit and eloquence of our former President, Mr. C. E. Mathews? And as for style, I cannot hope to approach Mr. D. Freshfield's charming and winning form of writing, which carries the reader with such delight through his interesting tour in Corsica.

It is one thing to contemplate and enjoy mountain scenery, and another to pursue original investigation; but although often bent on prosy physiological research when treading the realm of the high Alps, I am none the less a devoted admirer of their beauty. I have stood in mute rapture over the dark form of Mont Blanc cast by the moon on a silvery sea of fog floating below the Grands Mulets, and night after night have I watched the grand spectre of the Peak of Teneriffe lying at my feet with the white light of the moon around that majestic shadow. Again, I have jödelled with delight on the many tracks of the High Level route, and eyed with uneasiness that old wall of ice which threatens the climber as he hurries across the *débris* of avalanches on the Col de la Maison Blanche, on the way to the Grand Combin, a route I believe now given up.

While plodding up snowslopes in the rarefied atmosphere of high altitudes, and stopping occasionally to snatch a comfortable breath or two, it had often occurred to me that an inquiry into the influence of the lofty mountain air upon respiration might yield results not only interesting in a scientific point of view, but of practical utility to the climber.

The first question related to the explanation of the fact that man can reach altitudes which afford him not much more than a third of the air to be breathed at the seaside.

Mr. Whymper, after many long halts, reached the summit of Chimborazo, at 20,517 feet; in the season 1855-56, the brothers Robert and Adolph Schlagintweit remained ten days on the slopes of the great Garhwal peak, Ibi Gamin (25,500). Every bivouac during that time was about 17,000 feet, the highest reaching to an altitude of 19,325 feet; finally they ascended to 22,239 feet, which for a long time remained the extreme height attained. In 1864 Mr. Johnson climbed to a ridge in Ladák in the Western Himalaya which exceeded 22,300 feet, and in the following year he is said to have reached a height of 23,728 feet. Mr. Graham and a Swiss companion in 1884 first rose to an elevation

of 20,000 feet in the Himalaya, then 22,700 feet, close to the summit of Dunagiri, which he unfortunately could not attain, though within 500 feet, on account of mist and hail. The greatest achievement of Mr. Graham and his Swiss companions Boss and Kauffmann was their reaching the summit of Kabru, at least 23,700 feet above the sea. Such altitudes, however, have been greatly exceeded in balloon ascents made by Messrs. Glaisher and Coxwell and Monsieur Tissandier. Monsieur Tissandier's account of his memorable aerial expedition, in which his two companions, Messrs. Sivel and Croce Spinelli, lost their lives, being, I think, of particular interest, and in other respects connected with the subject of my discourse, I beg leave to give you an abstract of this narrative taken from the 'Comptes Rendus de l'Académie' for 1875. Monsieur Tissandier says:—

'The atmosphere exhibited on April 15 a peculiar condition. At 4,100 mètres (14,763 feet) we floated on the level of light cirrus clouds; at 7,000 mètres (22,966 feet) the car was surrounded by cirrus, with an atmosphere full of crystallised particles. At this altitude, of 7,000 mètres, no alarming symptoms had been shown by any of us, but at 7,500 mètres (24,606 feet) Croce and Sivel were pale, and the latter, of a sanguine temperament, closed his eyes at times. At 7,000 mètres we breathed repeatedly air containing 70 per cent. of oxygen gas, and were refreshed by it.

'At an altitude of nearly 7,500 mètres (24,606 feet) we were motionless in the car, and certainly benumbed. Sivel then emptied three bags of ballast in order to reach and rise beyond the altitude of 8,000 mètres (26,247 feet), which we had proposed to attain.

'From my recollection, which is very clear, of the benumbed state at such an altitude, the mind and body become by degrees weakened, though unconsciously, the dangers of the voyage are no longer contemplated, there is a knowledge that the ascent is progressing, and this is attended with a pleasant feeling. I soon felt so weak that I could not even turn my head to look at my companions; I wished to lay hold of the tube of the oxygen bag, but could not possibly lift up an arm. My mind is still, however, very clear; I continue observing the index of the barometer, and read 280 (millimètres), which is rapidly exceeded. I wish to call out, "We have reached 8,000 mètres," but my tongue is paralysed. Suddenly, at 1.30 P.M., I close my eyes and fall, losing all consciousness. At 28 minutes past 2 I awoke; the balloon was descending. I emptied a bag of ballast to check the speed, and could write a few lines in my note-book.

‘A few minutes later Croce Spinelli, recovering consciousness, seized my arm, and called my attention to the fact that ballast must be ejected. He throws it out himself; the balloon then rose once more into those high regions from whence it had just descended. The valve should have been opened, but none of us was strong enough to do so. I then lost consciousness a second time.

‘At 3.30 I had recovered sufficiently to observe the altitude, which was 6,000 mètres (19,685 feet). Croce Spinelli and Sivel were lying dead in the car. The subsequent examination of the barometric tubes showed a maximum elevation of 8,540 mètres (28,019 feet), and 8,600 mètres (28,215 feet).’

Tissandier adds to the above narrative that he feels certain Croce Spinelli and Sivel would have survived had it been possible for them to breathe oxygen.

Mr. Glaisher, in his memorable ascent, lost consciousness at 29,000 feet, and reached I think, 30,000 feet, so that both parties appear to have attained the limits of respirable air. That limit we may infer to be, as far as our present experience goes, about 29,000 or 30,000 feet.

I shall now ask, Is it not possible to rise still higher above the sea-level? This question I propose to answer in the affirmative, and for the following reason. Monsieur Paul Bert has shown that animals can live under pressures of 8·268 to 9·055 inches of mercury, and that if the pressure is reduced very gradually it is possible for life to be maintained under such low pressures as 6·693 and 7·087 inches of the barometer. On the occasion in which Messrs. Sivel and Croce Spinelli lost their lives the rate of ascent was very rapid, and consequently the aëronauts were under the worst possible conditions to stand such a great fall of pressure. They lost their lives when the barometer had reached 10·394 inches, which corresponds to an altitude exceeding but slightly the limits of existence established by Paul Bert's experiments for a rapid rise; but with a slow and gradual ascent a fall of pressure to 6·693 inches of mercury might be attained, which would mean an altitude of about 38,000 feet. I should say that, as a rule, animals do not stand low pressure so well as human beings, especially when the latter are well trained, and the only difficulty connected with lightness of air man would find in reaching the summit of the highest mountains of the globe would be the necessity of taking into the lungs the amount of oxygen required to carry on the work of climbing, which will be four or five times that wanted when sitting down in perfect repose;

how even this obstacle may be overcome in some measure will be told presently.

When most persons used to low altitudes reach heights of about 10,000 feet, they become conscious while ascending of shortness of breath, as if they had been running hard on the plains. Oddly enough this breathlessness usually seems quite natural, although the result of very slow walking. The phenomenon is due not only to the light air which supplies a deficient amount of oxygen to the blood for the heat necessary to be converted into motion, but also to the cold air and cooling down of the body by the evaporation from the skin and lungs, which is very great in dry air under reduced atmospheric pressure. I have made some experiments on the evaporation or expiration of moisture from the lungs at various altitudes on the Peak of Teneriffe, which showed me that this source of cold to the body increases (in the absence of cold air and moisture) pretty regularly as one ascends, being somewhat twice as great at the summit of the peak at 12,200 feet, as in Puerto Orotava at the seaside; the increase at the summit of the peak was by 43·5 per cent. It was not without some trouble that a few successful determinations of moisture emitted from the air-passages were obtained at the highest point of the peak. This summit is a cup-shaped depression about half a mile in diameter, volcanic rocks towering around it; the depth of the crater does not appear to exceed thirty or forty feet, and there is no difficulty in walking across it in any direction. The floor of this hollow space consists of a light, white sandy material, mixed at places with crystals of sulphur, while rocks crop up here and there, many of them covered with crystallised sulphur in a powdery form. In one or two spots there are real solfataras, steam issuing from fissures. Such fissures are common on the terminal cone; one of them at the foot of the cone poured out volumes of steam, while sulphurous acid fumes are also emitted here and there. The heat was intense, the sun pouring down its rays with unmitigated power, and everything was nearly too hot to be touched. Circumstances appeared to combine to baffle my experiment—the balance would not remain in an horizontal position, a very light breeze kept blowing the fine light sand about, and I had constantly to remove the beam of the balance to wipe the points of suspension. A blanket I had brought with me to use as a shelter from the sun while weighing would not keep in its required position, and I had to lie down at full length on the burning sand, without any shelter, to get

through my weighings. But I am wandering from my subject, and I must beg to refer to my book on 'Southern and Swiss Health Resorts' anybody wishing for further details of my rambles on Teneriffe.

On high mountains, in temperate and northern latitudes, the elements appear to unite to produce cold and lower the temperature of the body, thus causing an increased demand of oxygen gas from the air to maintain animal heat; hence the importance, in order to reach great heights, of placing the body in the best condition to make heat. Warm clothing, and especially food, will be necessary, and food must be taken of that kind which is most digestible and nutritive. I used to find a mixture of coffee and milk the best suited to my wants, of which I was careful to take enough with me. Tea, chocolate, bread and cheese, which are known to promote the formation of carbonic acid in the body, I usually found to agree, but neither meat nor wine appeared to answer. Now the oxidising effect of air breathed into the lungs is the formation of carbonic acid in the blood and tissues, which carbonic acid is finally ejected from the body with the expired air. The proportion of this gas in the outgoing breath is, oddly enough, nearly the very same as that in which a person could just live without suffocating, that is, about four per cent.; but the actual proportion, in fact, varies between, say, somewhat over three and five per cent., and alters in the same person. It is obvious that the higher the percentage of carbonic acid in air emitted from the lungs, the less the volume of air that has been required to produce it.

This statement will be clearer if I should express it in another form. While near Geneva, on one occasion, I expired, sitting, a mean of 15.5 litres holding one gramme-weight of carbonic acid, or, in other words, in order to expire one gramme of carbonic acid, I had to breathe 15.5 litres of air; the proportion would be 15.432 grains of carbonic acid for 0.554 cubic foot. A young friend of about twenty-five years of age breathed at the same place, and under similar circumstances, 13.7 litres of air holding one gramme of carbonic acid; therefore the 13.7 litres he inhaled accomplished the same work in his body as the 15.5 litres I inhaled; his breathing was therefore decidedly better than mine. Another young Genevese of the same age, while also in a sitting posture, had to take into his lungs only 10.8 litres of air in order to expire one gramme of carbonic acid; this gentleman gave me wonderful accounts of his powers of keeping in his

breath under water; indeed, I was surprised to find how little his respiration was hurried while ascending, at the utmost of his speed, from the Rigi Staffel to the Kulm.

I think there is every reason to conclude that the smaller the volume of air a person takes into his lungs to burn a given amount of carbon, the better able he will be to withstand the effects of light air in high altitudes, because the fact of his requiring but a small volume of air for the above stated object shows that the atmospheric oxygen passes very readily through the substance of his lungs into the blood, or, in other words, that the blood becomes fully oxygenated at the expense of a smaller bulk of air breathed than it does with other people differently constituted. The proportion of air breathed to carbonic acid expired is not, however, fixed for the same person, and it seems to vary within somewhat wide limits at the same altitude under different circumstances of age, health, climate, or food, and consequently a great many experiments are required to establish the influence of any special agent on this phenomenon.

I have made between 400 and 500 analyses of air expired at elevations varying from the seaside to the summit of the Breithorn, at 13,685 feet. In 1876 I went up, with four porters carrying my instruments, to the well-known St. Théodule pass, and remained there eight days, going up the Breithorn to continue my experiments on three different occasions. In the summer of 1877 I experimented at the Hospice of the Grand St. Bernard, at the Riffel Hotel, and again at the St. Théodule Hut and on the Breithorn.

In 1878, wishing to be free from the influence of cold on the phenomenon of respiration, in order to be able to determine the exclusive influence of altitude on breathing, I made a journey, with all the requisite instruments, to the island of Teneriffe, and spent three weeks on the peak, sleeping under canvas. On that occasion I selected three stations, one at the seaside, one at an altitude of 7,090 feet, where I remained eleven days, and one near the summit of the peak at 10,700 feet, where my stay lasted ten days.

In 1880 I returned to the Alps, accompanied by a young scientific friend, and we both submitted ourselves to experiments at Geneva, at Cormayeur, and on the Col du Géant, 11,030 feet, where we spent three days in succession in occupation of the hut; on that occasion three porters carried up my instruments, one of the cases weighing 40 kilos, or rather over 80 pounds, which one man took up on his shoulders from the Pavillon du Mont Fréty to the hut.

In 1883 I made a fresh series of experiments with another young gentleman, selecting Geneva and the Rigi Staffel Hôtel, in order to obtain the effects of altitude at the usual elevation of an alpine sanatorium. The results obtained fully confirmed those arrived at from the other experiments, and may be taken as a reply to a notice which has appeared in the 'Alpine Journal' alluding to my results as not being quite conclusive. Thus my investigations have ranged over a period extending from the year 1876 to 1883 inclusive.

The amount of air breathed compared with that of the carbonic acid exhaled may, I fully believe, be considered as a test of the breathing powers of any man, a relatively small volume of air, used for respiration, for a given weight of carbonic acid exhaled being so much gain. This leads me on to the capital result obtained from all my experiments on the influence of altitude on respiration, and this is, that as a person ascends beyond a certain height above the sea level he breathes less air, reduced in volume to the freezing point and seaside pressure, to burn a certain weight of carbon, or produce a certain weight of carbonic acid, than he does at or near the sea level; a rule which holds good irrespective of temperature, of food taken, and even of the deleterious effects great altitudes exert on many people. My results are expressed in the following table:—

Stations	Altitude	Weight of carbonic acid expired (grammes)	Litres of air expired, reduced to freezing point and seaside pressure
Yvoire, near Geneva .	1,230 feet	1	13·6
St. Bernard	8,115 "	1	} Mean at and above 8,115 feet
Riffel	8,428 "	1		} up to 13,685 feet
St. Théodule	10,899 "	1	11·05
Summit of Breithorn	13,685 "	1	
<i>On the Peak of Teneriffe.</i>			
Seaside	—	1	12·4
Guajara	7,090 feet	1	11·9
Alta Vista	10,700 "	1	10·7
Foot of terminal cone	11,740 "	1	10·6
<i>Air expired by a Chamonix Guide on the Peak of Teneriffe.</i>			
Seaside	—	1	11·3
Guajara	7,090 feet	1	10·8
Alta Vista	10,700 "	1	11·4

Another series of experiments made on two persons at Geneva, Cormayeur and the Col du Géant gave :—

In my case.

Stations	Altitude	Weight of carbonic acid expired (grammes)	Litres of air expired, reduced to freezing point and seaside pressure
Yvoire, near Geneva .	1,230 feet	1	15·5
Cormayeur	3,945 „	1	{ Mean before and after ascent 14·35
Summit of the Col du Géant	11,030 „	1	
<i>In the case of Mr. D., aged 25.</i>			
Yvoire, near Geneva .	1,230 feet	1	13·7
Cormayeur	3,945 „	1	{ Mean before and after ascent 14·8
Summit of the Col du Géant	11,030 „	1	

In another series of experiments made on one person—Mr. T., aged 25, at Geneva and on the Staffel—the results were as follows :—

Stations	Altitude	Weight of carbonic acid expired (grammes)	Litres of air expired, reduced to freezing point and seaside pressure
Geneva	1,230 feet	1	10·78
Rigi Staffel	5,230 „	1	9·51

I will now give some illustrations from my experiments on the Peak of Teneriffe. At the seaside, for one gramme of carbonic acid expired, I breathed 12·4 litres of air; at my first station, that of Guajara, 7,090 feet, for the same amount of carbonic acid I breathed or expired 11·9 litres instead of 12·4. At Alta Vista (10,700 feet), my second station on the Peak, I breathed 10·7 litres, and at the foot of the terminal cone, 11,740 feet, 10·6 litres. My experiments were rather few at this last station, where I spent only a few hours; had they been more numerous the proportion of air breathed would have probably been still lower. The only irregularity in the large number of experiments reported in the accompanying table was in the case of my companion, a Chamonix

guide, with whom the lowest proportion of air expired on Teneriffe for one gramme of carbonic acid was at Guajara, or half-way up the Peak instead of being at the highest station. In the trip to the Col du Géant as regards my young companion the law began to tell only after Cormayeur, or above 3,945 feet, while in my case it already held good between Geneva and Cormayeur. I cannot explain the irregularity attending the breathing of the guide, as there is no reason why the rule should not apply to alpine guides, or people trained to the influence of altitude, as to others; this one exception out of such a large number of experiments certainly does not invalidate my result.

I should like it to be understood that in all these experiments I refer to air reduced to freezing point and seaside pressure, as it is obvious that as a person ascends into lighter air he must actually breathe a larger volume of air (unreduced), within a given time, in order to supply his blood with the requisite amount of oxygen; but the increased volume of air will be less than in proportion with increased elevation. This low pressure at high altitudes often necessitates occasional halts; but if it was not for the circumstance I have just endeavoured to explain, the distress from want of breath would be much greater, and might not improbably bring the climber to a prolonged standstill, or possibly check the progress of his ascent altogether.

This law of nature I cannot explain otherwise than by admitting as a fact that increasing altitude facilitates the passage of the oxygen of the air through the substance of the lungs into the blood, so that, although there is a smaller weight of air breathed, its oxygen reaches the blood more readily than it would have done at a lower altitude, thus making up in a certain degree for its scarcity.

It is probable that as altitude increases this phenomenon becomes more and more marked, but I am not prepared to state that such is actually the case. At all events, the effect in question of altitude upon respiration must be of great assistance to climbers, and may help them materially to reach the highest summits in the world.

This influence of mountain air on respiration is also in my opinion the main cause of the beneficial effects of alpine sanatoria on consumption, both in summer and winter, as the increased readiness with which the blood becomes vivified from the atmospheric oxygen at such stations must act as an important agent towards improvement of health and final recovery.

I shall not trouble you with the absolute amount of carbonic acid formed in the body within a given time; suffice it to say that four or five times more of this gas is manufactured, say, per minute, when engaged in arduous climbing than when sitting still. Dr. Mermod, a Swiss gentleman, experimented in 1878 at two stations, Strasburg and St. Croix in Switzerland, differing in altitude by about 3,000 feet* only. He concludes from this single series of experiments that the effect of altitude is to increase the amount of carbonic acid expired, and diminish the volume of air breathed, but he goes no further. I quite agree with him that in the Alps, where the atmosphere becomes, in general, colder as one ascends, there is an increase of combustion in the body, which is obviously necessary to keep up animal heat; but in a warm climate, like that of Teneriffe, such is not the case. Where there is but little difference between the temperatures of the several stations, all of them being warm, the carbonic acid emitted, as I observed on the Peak, is very nearly the same at every one of the stations; at the seaside, and at 11,745 feet, I expired exactly the same mean amount of carbonic acid per minute; but then the volume of air breathed in a given time at the highest station, reduced to freezing point and seaside pressure, was much less at the foot of the terminal cone than at the seaside, being 4.99 litres per minute at the higher station and 5.84 litres per minute at the seaside. The only way is to connect the two phenomena with one another as I have done, and then the rule becomes absolute, which is not the case otherwise. Dr. Mermod's experiments, calculated and expressed like my own, would give one gramme of carbonic acid to 14.6 litres of air expired at his lowest station, and one gramme of carbonic acid to 13.1 litres of air at his highest, which agrees very fairly with my experiments, although the difference is rather great for such a small altitude.

I have but one word to add as to the inhalation of oxygen gas at great altitudes. This has been shown to relieve breathlessness very materially in balloon ascents, but it is not possible to carry about oxygen when engaged in mountaineering. There appears, however, to be a substitute for the inhalation of oxygen gas—that is, the ingestion of the substance called potassium chlorate. This substance, often employed in medicine, gives out oxygen gas when heated, and I was told by Sir Douglas Forsyth that he had taken it with much

* 'Bull. de la Soc. Vaudoise des Sciences Nat.' 1878.

benefit while on the Cashmere Mountains on his way to Kashgar. I therefore suggested its use to Mr. Whymper, and I understand he found much relief from it in his first ascent of Chimborazo. I merely state this as a hint to climbers, who might carry about with them powders of potassium chlorate, commonly called chlorate of potash, in five or ten grain doses, and take this salt dissolved in a little water on the first appearance of mountain sickness. The powders, kept in wide-mouthed bottles well corked, would be easily portable without deterioration of any kind.

SKETCHES FROM THE DOLOMITES.

BY JULIUS MEURER.

(Read before the Alpine Club, April 6, 1886.)

WHEN the invitation to read a paper before the Alpine Club reached me I felt no little embarrassment. You will understand that I was animated by a lively desire to comply with this request, partly because it could only confer upon me a great honour to speak before a number of eminent alpine climbers distinguished by their feats and exploits, and partly because an opportunity offered itself to render a service—such as my feeble powers would permit—to the Alpine Club, of which I have been a member for a number of years. This, gentlemen, was the first feeling which asserted itself when the invitation came to hand. Very soon, however, weighty doubts presented themselves, and I said to myself, ‘What can I lay before the members of the Alpine Club, who are accustomed to hear the best that has been done in the domain of alpine climbing? And besides, how shall I—suppose I found a subject which could claim some interest—put it before them?’ These justifiable perplexities had almost determined me to renounce the honour, however alluring it appeared in many respects. My colleagues in the Austrian Alpine Club, however, tried to persuade me to accept the offer, because they were of opinion that the friendly relations between the English Alpine Club and the Austrian Alpine Club would become strengthened thereby. On this good understanding we in Austria set the greatest value, for with you, as with us, the principal point lies in the achievements in the High Alps of the members of the Club; and your organ as well as ours, the *ALPINE JOURNAL* and the ‘*Alpen-Zeitung*,’ are the periodicals for climbing in the High Alps, and the English Alpine Club is and will always

remain the model for the Austrian Alpine Club. It was particularly this circumstance which finally induced me to avail myself of your invitation—but I am afraid that the members present to-night will have to suffer for my rashness.

It is, once for all, an immutable fact, founded on nature, that among a number of homogeneous objects *one* infallibly must be the *best*, and another the *worst*. It is a natural law to which we must submit. In this room you have listened to a series of brilliant papers, in which glorious feats of alpine climbing have been depicted, and the Alpine Club will, I hope, flourish to the remotest times and spend countless evenings in the same way. Which among this series of lectures was or will be counted the best I do not know; to-day, at any rate, I pity the members who have to listen to the worst paper, and this certainty I can confidently carry away with me across the Channel: that in this hallowed room, where one is accustomed to hear resounding the most elegant language, more faulty English than that of to-day has never been heard.

As a subject for my paper I have chosen harmless chat on the Dolomites. I am aware that generally in this room 'first climbs' are described; but I, unfortunately, belong still to the old school, and we old people begin slowly to find that we cannot adapt ourselves to the new style of mountaineering; but on that subject you perhaps will allow me to say a few words at the end. I have on that account endeavoured to select a neutral province. The Dolomites are unique of their kind; we do not find the like in the world, as far as it is known to us to-day. The Dolomites are limestone mountains, and yet so different from the usual limestones as to form quite a species of their own. They surpass the ordinary mountains in their grand picturesque formation, in their bold, fascinating modelling, in short, by their beauty and grandeur; and the active mountaineer finds in the Dolomites a rich, abundant field for daring exploits. With the exception of the Ampezzo valley the districts of this delightful mountain-land are as yet rather neglected, and I should like to recommend them to the notice of the indefatigable members of the Alpine Club.

I.

My First Acquaintance with the Dolomites.

On August 14, 1866, morning had its customary struggle with the night; and its victory was more difficult than

usual, for a faithful confederate had joined the power of darkness: a dense, impenetrable mist encircled mountain and valley, and a dusky, gloomy dawn followed the pitch-dark night; the day—the dear golden daylight—could not force its way through the night and mist—and just that morning day was longed for with great impatience by many.

On the broad Alm plateau, between Monte Zovo, Colle Castello, and Colle Somacen, above Auronzo, were encamped five companies of Austrian chasseurs (*Alpenjäger*), stretched on the wet, dew-besprinkled grass. Three night and two day marches over in parts difficult mountain ground had brought the troops from Carinthia over the Plöcken Pass and through Comelico. The tired men, arrived here on the plateau, had thrown themselves down on the wet grass to await the break of day. In the midst of the group stood the officers and held a council of war; on a rock lay, spread before them, the map, which was examined by the pale light of a burning pine torch. I was among this group of officers. Only with the effort of my whole energy was I able to keep off sleep, which pressed like lead on my eyelids and threatened to conquer me, for it had been my bad luck to spend the night between two night marches (which my comrades had passed sleeping in good quarters at Forni Avoltri) as the commanding officer of the outposts. It was not surprising that after three sleepless nights and the continual heavy marches I irresistibly longed for sleep. On that account I wished more than all the others that day might appear, for it would either bring good quarters or exciting activity. Slowly, extremely slowly, did the time pass whilst day and night finished their struggle. Through the dense mist in the east gleamed sometimes the reddish, faint, trembling light of the young day, and the figures near stood out plainly and more plainly; but whilst the dense mist prevailed we could not think of leaving our camp, for we knew well that the Garibaldians lay in our immediate neighbourhood and occupied Auronzo. Then suddenly, touched as it were by a fairy wand, the mist broke asunder and the luminous orb of day showed himself in his dazzling splendour; the blue sky smiled over us and the mist hid itself in the valleys; but even from them the fiery ball of heaven drove it away very quickly, and clear and transparent lay the picture before our eyes. And what a picture! Separated by the deeply indented Anzei valley, with its numerous villages, the massive block of the Marmarole,

with the Monte Frappa as its highest summit, raised itself boldly up; the first rays of the rising sun coloured blood-red the rent and split cliffs and walls and the daring and defiant aiguilles on the extended, ramified ridge, and black as night showed itself the rock where the life-giving rays of the sun had not yet penetrated; streaks and balls of grey mist crept up the steep walls, but as soon as a ray of the sun touched them they were scattered to untraceable atoms. Farther in the west rose from the vanishing realm of haze the proud pinnacles of the Ampezzo Dolomites, the beautiful, magic promised land, at that time still adorned with the virgin wreath; for to whom would it have occurred twenty years ago to set his foot on these wild rocky towers, the steep walls of which seemed unapproachable? In those days among the thousand of Dolomite points there were only very few which men, except chamois hunters and shepherds, would have ventured to climb. At the sight of the rising sun breaking through the mist the men, touched as it were by an electric shock, had jumped up, for they were all sons of the mountain, whose hearts beat quicker at the sight of this fairy-like, glorious vision. For the moment everybody forgot fatigue and hunger, and with new vigour the march downwards into the valley was begun. It became evident at some distance from Auronzo that the place had at our approach been evacuated by the Garibaldians, and that they had withdrawn in a south-easterly direction on the main road towards Pieve di Cadore.

On account of the over-exertion and over-fatigue of the troops we were obliged to give up following them immediately; our first care was to procure for the men rest, food, and drink.

With me also fatigue and hunger had asserted themselves in so pressing a manner that my whole mind and aim were directed towards a good Italian ham and a bottle of the fiery juice of the grape, and if possible a good soft bed; for that I would have gladly at that moment sacrificed the most lovely virgin Dolomite peak. As it became clear to me, however, with time that without payment not even a picked ham bone, certainly not a bottle of wine, would be bestowed upon me by the good Auronzonians, I resolved, in order to see my desires satisfied, to adopt another means, one which already in many cases had proved efficacious. I exhibited a bright napoleon; and behold the Auronzonians, who until now had been so reserved, and according to their own declaration had been 'eaten up' by the Garibaldians, produced

suddenly rich provisions of eatables and wines, for which to be sure they asked exorbitant prices—but ‘à la guerre comme à la guerre.’ Soon we were also lodged in good quarters, the men in mass-quarters (many together) and we officers, free from service for the moment, in good inns and private houses.

But with the powers of Fate mankind
No eternal bond can bind.*

Scarcely two short hours had I enjoyed sweet sleep when I heard the alarm call of the shrill bugle horn. At first I hoped it had only been a bad dream, but it was stern reality, and in a few minutes I stood on the rallying-point of my company. From the ravine in the east the shrill signals of our comrades at the outposts, who had already begun fighting, reached us, and first isolated and then more regularly and more frequently re-echoed the crackling, roaring greetings which friends and foes exchanged with their faithful rifles. After but a short delay we also were in the midst of the bracing fight. All fatigue was forgotten and body and soul felt new-born.

The road from Auronzo to Pieve di Cadore enters, near Cella, the most easterly situated of the hamlets which belong to Auronzo, a defile; right of the road rushes the wild mountain stream of the Anziei valley; on the right and left rise sparingly-wooded slopes to a height which is partly crowned with calcareous pinnacles. Our aim was to force our way in this defile, from which our adversary had wished to escape, and to press back the enemy. Only men accustomed to climbing mountains could, when hampered by bag and baggage and carrying their rifles, advance on this difficult ground. There, indeed, took place a skirmish, which an alpine climber as a spectator would have witnessed with special pleasure. Not intrepidity and valour alone, but also dexterity, boldness, and skill in climbing were auxiliaries to our success. With cat-like skill our brave chasseurs climbed from position to position to fall upon the enemy sideways and flank him; the Garibaldians, to prevent our doing this, also mounted higher and higher, keeping pace with us. In a short time the mountain glen was right and left up to the top one single chain of fire. The picture which presented itself to our view was a singularly interesting one—even a picturesque romantic one, I might say.

* Schiller's *Lay of the Bell*.

Grave and dumb, the pale yellow, venerable, towering Dolomite summits looked down astonished on these wild proceedings; from their iron walls, which had braved centuries, the sound of the crackling volleys and the lengthened signals of the bugle horns re-echoed a hundredfold in the mountains; deeper in the valley on the green banks and meadows raged a wild, bloody combat; upwards and downwards heaved the hot struggle; from tree to tree, from rock to rock, making use of every covering, we tried to push forward; only by coolness and intrepidity was it possible to force our way, for it is a very different thing to climb a steep mountain-wall unmolested at the peaceful pace of a tourist and in the face of an adversary who challenges you at every step, aiming at any vulnerable point with grape shot. Here one has not only to mind one's feet; one must also exert oneself to find a cover for the other parts of one's body, as one is not inclined to expose sound limbs too long to one's attentive opponent as a welcome butt, and there occur on those occasions sometimes critical situations, as, for, instance, when one hangs on a tree or trunk between heaven and earth in order to raise oneself up, whilst tingling and crackling the flying missiles strike into the splitting wood close at hand.

In this alpine war we spent a part of August 14. In the afternoon we had advanced as far as the wider part of the valley near Tre Ponti, where the Anzei runs into the Piave. One division on the right wing, covered by the little Val Vallazza, had succeeded under extraordinary difficulties in reaching the rear of the enemy by the Monte Chiadin, and soon after the shrill signals and the first volleys of these brave men sounded the white flag was hoisted in the opposite camp: the fray was at an end. My acquaintance with the Dolomites had, however, been made.

II.

In the Ampezzo Valley. Monte Cristallo.

Whoever in life makes a pleasant acquaintance tries to cultivate it. I did so too, and very often did I return to the fairyland of the Dolomites with renewed affection. Some people wrongly point out as 'Dolomites' only the heights of the Ampezzo district, whilst in reality the Dolomites reach from the Plöcken Pass in the east to the foot of the Pre-sanella in the west. Certainly the Ampezzo Dolomites, if they cannot claim to be the finest, are among the finest of these mountains; they have, besides, the great

advantage over their rivals that they can be reached in the most convenient, easy manner; hence their widely-spread fame, their special popularity; and while talking to-day of the Dolomites I must give the first place to the Ampezzo group. The most glorious point within the Ampezzo group is to be found near the hotels of Landro and Schluderbach, which are a half-hour's distance from each other. Situated at the altitude of 1,407 and 1,442 mètres in a wide valley, these two points unite the charms of sweet valley landscapes with the romantic scenery of the mountain world—green meadows, dark pine forests, roaring torrents, cheerful, white-glittering houses. The blue waters of the Dürren-See enliven and give variety to the valley. In a circle over the dark mountains in front the greyish yellow, pale reddish Dolomites lift to the clouds their tops, which are shattered, corroded, and cleft in pieces by storm and weather. Immediately behind Landro a grand, enchanting picture unfolds itself before the astonished eyes. Before us lies, enclosed by steep banks, the quiet, blue-green Dürren-See; on its clear expanse of water is reflected a picture true to nature. The three-pointed Monte Cristallo, towering in the background, with its glacier embedded high up on its shoulder, is reflected sharply and clearly in the water. Nature and her reflection present here a marvellous double picture. But that is not all; in turning our eyes to the left we are struck by a second, not less romantic scene. We have before us the gap of the narrow Rienz Valley, from which the Black Rienz rushes forth; the background of this gap is filled in by the perpendicular, tower-like three pinnacles of the Cime di Lavaredo (Drei Zinnen).

In nearing Schluderbach the Cristallo disappears behind the lower mountains in the foreground, whilst at the turn of the road the Croda Rossa (Rothwand, Hohe Geisl) stands out in its whole grandeur. The colouring of this mass of dolomite is so rich in shades and picturesque in effect that the Croda Rossa in this respect is probably unique of its kind; the tints, ever changing, vary from the purest white to the deepest blood-red, and offer thus, particularly in favourable morning lights, a fascinating picture. If you turn only a little from Schluderbach towards the Val Popena Bassa, you easily find a standpoint from which you overlook the Croda Rossa at your right, Monte Cristallo with its glacier, the pyramid of Piz Popena, and the Cristallin opposite, and on the left the points of the Cadini.

As we are in Schluderbach we must have a glimpse of

Cortina. Several roads are open to us to get there—the excellent highroad, very remarkable in point of scenery, passing the ruins of Peutelstein, near which a good pedestrian, I may remark, ought to leave the highroad and take the long but most repaying roundabout way through the Travernanzes valley and the Col dai Bos to Cortina; besides there is the charming way by Misurina See and Tre Croci, and finally the way which *we* will choose, over the summit of the Monte Cristallo (3,260 mètres).

In the year 1877 the Monte Cristallo was still locally thought a difficult mountain. The ascent was at that time not often undertaken and had still a certain renown. It belonged to the distinguished excursions. Different times different ideas. Has not even the dreaded Matterhorn lost its prestige, since hundreds make pilgrimages up there? It has even become a ladies' mountain; and why, therefore, should the Monte Cristallo claim a better lot? This rocky pinnacle is now also often ascended, and no particular difficulties are met with. It was very different in the year 1877. At that time in Schluderbach a mountaineer ascending the Cristallo was still treated with a certain respect and consideration, and this was my case when I, with my cousin De Liagre and his son, and accompanied by the guides Michael Innerkofler, one of the surest and boldest mountain-climbers I ever met, and his brother Franz, left Schluderbach in order to ascend Monte Cristallo. The way leads through the Val Fonda, filled with shingle and stones. After two hours' walk we found ourselves at the foot of the small Cristallo glacier, which comes down rather steeply from the Cristallo Pass in a wide stream, and between the Cristallostock and the Cristallin, or rather Piz Popena. On the south-east the tower-like wall of the Piz Popena (3,231 mètres) imposingly descended suddenly before us. Not one hundred paces from us four chamois, each with her kid, slowly crossed the glacier, throwing our two guides unavoidably into the well-known chamois delirium. The glacier surface was frozen very hard, but we got up quickly with crampons without cutting steps, and stood after an hour at the Cristallo Pass (2,826 mètres), a small depression between Monte Cristallo to the west and Piz Popena to the east. Hence we turned to the west and mounted a very steep, sharply frozen slope, and after a quarter of an hour we reached the rock. Here only began the real activity. After putting down the crampons and leaving the ice axes, we began the ascent of the rock wall of the Cristallo itself. A very accessible couloir leads to the so-

called vallon, at that time reputed as the most difficult passage. The passing of this couloir offered to us no remarkable difficulties. More difficult we found farther on a broad gap, the steep, smooth ribs of which were entirely covered with a thin glass-like ice crust. This seemed to us the only really critical, disagreeable spot, on which to slip might be accompanied by fatal consequences; the fact that we just then were obliged to hurry rather, as stones had repeatedly shot past us, made it more critical. Farther up followed several interesting places, on which one must work one's way on all fours over narrow rock ledges which are vaulted over by impending rocks. But all this was to a mountaineer accustomed to rocks a good, stiff, but not a difficult climb, presenting no real danger. Five and a half hours after leaving Schluderbach we set foot on the highest summit of the Cristallo (3,260 mètres), which is composed of three points. Landro and Cortina lay deep at our feet, but besides these places we saw above and around us on all sides nothing but mist, a fate which many a mountaineer has experienced.

The descent is made mostly by the same way as far as the vallon. The gully, which we found frozen in ascending, was free from ice coming down, and offered to us in this state no difficulty. From the vallon one turns, in order to go to Cortina, southwards. Over not very difficult rocks you reach the Almböden (grassy alpine slopes) near Tre Croci (1,815 mètres), and on a good, practicable road Cortina d'Ampezzo (1,219 mètres). From the Cristallo summit to this point one reckons about four hours.

Cortina, situated in a broad valley, is surrounded by a glorious circle of proud heights. We see there our Monte Cristallo with the Pomagagnon at its foot; the Sorapiss (3,310 mètres), the lordly Antelao (3,320 mètres), the Pelmo (3,162 mètres), the Nuvolauspitzen (2,649 and 2,593 mètres), the three points of Tofana, the highest of which is 3,269 mètres, and others, a rich field of exploration for the energetic mountaineer.

III.

Gaderthal and Marmolata.

Due south from Bruneck, in the Puster valley, rises a green mountain ridge covered with woods and meadows; it deprives the Pusterthal in this place of the view of the Dolomite heights, which rise to the south, but gives to those who take the trouble to climb for four hours a panorama

that need not fear comparison with any of the mountains renowned for their view. Situated between the Dolomites and the snowy Central Alps or Tauern, the strange contrast between the views towards the south and the north is in the highest degree striking. The Kronplatz (Plan di Corones, Spitzhörndl), 2,269 mètres high, is a mountain which is easily reached on horse or mule, with a small inn twenty minutes from the top; the railway leads to its foot, where the cheerful little town of Bruneck (826 mètres) is situated. Going down from the summit southwards you arrive at the pretty little watering-place St. Vigil (1,188 mètres) in the Enneberg valley, whence you may continue along the Gader valley to St. Leonhard (Abbey Badia)—1,337 mètres—at the foot of the massive walls of the Kreuzkofel, on the side of which, high up, the pilgrimage church of Heiligkreuz has been built, whence you have a most enchanting view.

Deep snow covered the Gader valley; in the crevices, chimneys, and couloirs as well as on the high plateaux and the highest summits of the Dolomites the winter snow still lay; only on the hard walls and smooth rock-precipices no atom of the winter dress was visible; there the snow does not adhere, and if by chance these walls are white with rime and hoar frost the first ray of the sun frees the cliff from its veil, and there at least the Dolomite shows its own peculiar colouring, so rich in shades.

The sun had already gone down, but the moon shed her silver light on the snow-covered landscape, when on March 10, 1881, at 5.30 P.M., two light sledges at a quick pace flew through St. Leonhard, in the Gaderthal, in the direction of Corvara. The steep rock-walls of the Kreuzkofel rose like phantoms, splendidly lit up by the pale moonlight; soon the thin pine-forest received us (for I was the occupant of one of the sledges). The branches of the fir trees bent down under the burden of a thick layer of snow and the silvery light of the moon was reflected thousandfold in millions of small ice crystals. Intoxicated, the eye roamed from the glowing disk of the moon down to the magic phantoms of snow-furrowed rock-ridges and rested finally on the magnificent diadem of firs, and could not tire of the wondrous, fascinating picture of this fairyland. Only too quickly the two hours' drive came to an end at the small, charmingly situated hamlet of Corvara (1,572 mètres).

That the arrival of four tourists in this quiet, out-of-the-way place at this time of the year created a great sensation among young and old is conceivable; we were nevertheless

soon provided for, and whilst we partook in the public room of a quickly prepared meal a fire was lighted in our bedrooms. The next morning was the most delightful one imaginable in the Highlands—bright sunshine and a dark blue sky over the snow-covered landscape. Corvara lies in a deep valley which is surrounded by considerable Dolomite heights. Particularly imposing is the massive, broadly-stretched Sellastock with the Boè (3,151 mètres), the Mesules, the Sella, &c.

Accompanied by several porters, we started at 7.30 A.M. ; the snow was still frozen hard, although the temperature was already mild in the sun, and we advanced easily and quickly, so that we reached the Grödener Jöchel (2,130 mètres) at 10 o'clock. Here we had an extensive breakfast in a hay-loft, then continued our way, and arrived, thanks to the favourable conditions of the snow, in half an hour at Plan (1,580 mètres), in the Grödener valley. The air was so mild, the sun shone so warmly, that we could have our coffee in the open verandah. Towards 12.30 we set out again, left the Grödener valley, mounted again, and stood in less than two hours on the Sella Joch (2,230 mètres). Here we are in the immediate neighbourhood of the colossal rock massif of the Sellastock, just opposite the elegant Langkofel (3,179 mètres); near it the long-unconquered Grohmannspitze (3,174 mètres). Here on the Joch we were met unexpectedly by a sharp wind blowing up from the Fassa Thal, which drove us downwards quicker than we liked. In sublime majesty stands out at this point the Queen of the Dolomites, the Marmolata, in her white, ample mantle; she is so overpoweringly beautiful that we felt obliged to give up the descent to Campitello and hasten over to her. . . . What Mont Blanc is in the Western Alps that the Marmolata is in the Dolomites; she is the absolute, all-overtowering ruler in her dominions. Just as Mont Blanc, the Marmolata is a so-called easy mountain, and as with the former so with the latter, the north side is easily accessible, whilst the southern slope is a terribly sudden one, by which the summit can only be reached with great difficulty; the direct ascent from the south to the summit has, indeed, never been made. Although the usual ascent is in no way difficult, still the Marmolata is worthy to be here particularly mentioned, because it can claim the charm of being the highest of its group. The same can be said of Mont Blanc, which always offers equal attractions and has been honoured by a visit of all the members here present, who do not generally conde-

scend to climb easy mountains. Besides, the power of the Marmolata to offer the grandest, the vastest, and the most favourably arrayed panorama cannot be questioned. The ascent has of late been considerably facilitated by the building of a small alpine inn in a charming situation on the Fedaja Pass (2,029 mètres), near the small Fedaja Lake. You find here plain but tolerably good board and lodging. The Fedaja Inn is reached from Campitello in $3\frac{1}{4}$ hours, from Caprile through the Sottoguda gorge in $3\frac{1}{2}$ hours, from Pieve di Livinalongo over Forcella Padon or Forcella Davedino in $3\frac{3}{4}$ hours.

On July 29, 1877, my cousin De Liagre, his son, the guide Archangelo Dimaj, of Cortina, and myself reached the Fedaja Alm (the above-mentioned inn did not yet exist at that time). The Alm was not yet taken possession of; the Senner was only to arrive the next day. But in the chalet bivouacked Italian workmen, sent by the section Agordo of the Club Alpino Italiano in order to construct a place of shelter on the Marmolata. They willingly made room for us in the hut, allowed us to prepare our supper and to warm ourselves at the hearth, as a cold wind blew from the Fassa valley over the pass. They also willingly shared their hay to sleep on with us; only, dividing it among eleven people, not a great quantity fell to the lot of each, for the hay shed was, properly speaking, empty, and only a very thin, firmly pressed down layer of hay covered the ground. The wind blew intrudingly through the walls, which consisted of planks loosely put together and presented no particular obstacle to its free passage. It was a hard, cold, and at the same time uncomfortable couch, from which we rose without regret at two o'clock in the morning.

When we came out of the hay shed the moon was still standing high in the sky, and lighted up fairy-like the glorious scenery. Before us extended in prodigious breadth the glacier meadows and ice fields of the Marmolata, interrupted by the bold ridge of rocks of the Sasso di Mezzo, Camarziera, and Piz Fedaja, which stood out darkly and gloomily from the sparkling, glistening snow masses. Quickly we all four hastened, after having taken some breakfast at 2.30 A.M., towards the alluring glacier fields. Steeply the way goes over rocky stones, until we set feet after an hour's ascent on the foot of the glacier, 2,600 mètres above the level of the sea.

We made use of the *Steigeisen* and reached easily in that way the rather slanting ice surface, and after twenty

minutes gained the centre of the glacier. After two hours' wanderings we reached the rock where the above-mentioned shelter, still situated on Austrian ground, was to be blasted in the wall of the rock. This undertaking from the beginning proved a failure and never came to a satisfactory end, as the variable condition of the glacier put in its veto. From this point there is another ascent on the glacier, which here slopes more steeply, a short climb up steep rocks followed by a gently sloping snow ridge, and we stand after an hour's work on the highest summit of the Marmolata—the so-called Marmolata di Penia (3,494 mètres). To the east of this point rise the other two summits, the Marmolata della Rocca and the Sarauta, the last one due east. It was 7 o'clock when we set foot on the summit; it had thus taken us $4\frac{1}{2}$ hours from the Fedaja to the top, some rest included.

The view which we enjoyed that day was enchanting. Pure and spotless did all these thousands of summits show themselves in the most beautiful sunshine, and brightly and beamingly the well-known Coryphæi among the mountain giants of our home Alps greeted us. The Marmolata stands almost in the centre of the district called the Dolomite Alps. The view which is offered over this chaos of torn, furrowed, fantastic pinnacles, the wild, stony wastes, over the alpine meadows below, with their luxurious green, which only the sun of the south can produce, over pine and larch forests, is almost unique, and even the most unimpressible being cannot help feeling elevated and purified before such sublimity of nature. But this not all: if we let our eyes gaze northwards beyond the chaos of the Dolomite heights, there stretches itself in lofty majesty in a noble half-circle, which reaches from the Presanella and Ortler to the Glockner and Ankogel, a wreath of eternally snow and ice covered mountains, and I consider I am therefore justified in saying that the view from this summit, the Marmolata, ranks among the finest in the Alps.

IV.

I have endeavoured, gentlemen, to give you in a short sketch a picture of the Dolomites in war and peace, in winter and summer, in mist as well as in sunshine. I am only too conscious of my faulty performance, and I feel at the end more than ever my inability to offer you anything half as good as you generally hear from this chair; I have not been able to relate to you any grand feats of

climbing, any victory over a point hitherto considered invincible, anything of high mountains before which even our Mont Blanc must bend its white, hoary head, anything of bold exploits in expeditions performed without guides. I belong to the old school, which is excelled by a younger generation. We—I address myself now to my contemporary colleagues in the Alpine Club—must bear this with resignation, for it is the way of the world, and console ourselves with the reflection that the present younger ‘guideless’ generation will one day be supplanted by a still younger one, that in its turn will boast itself far better than its fathers.

If I try to cast a fugitive, inquiring glance into the future, I see on the square before the Hôtel Monte Rosa at Zermatt, which has almost become historical, where now our first-class guides lounge about, the eternal pipes in their mouths, waiting for an alpine bird of passage, I see with my mind’s eye, instead of them, the GENTLEMEN GUIDES, members of the European Alpine Clubs, crowded together for the season, offering in the most courteous manner their services to the arriving travellers, inexperienced in mountain ascents. The ambition of our grandchildren will consist in being able to show in their books of testimonials a series of difficult expeditions and flattering words of recognition for modest behaviour and good services as guides, and in this room our descendants will tell how many tourists and ladies they have ‘towed up’ the Matterhorn, and how many pounds of luggage they have carried on their own august backs. Then will be a happy time for tourists! Instead of the high prices which we were obliged to pay to our guides if we wanted to set foot on a proud summit, our grandsons (who will vie as hotly among themselves as the guides do nowadays), will not only pay the hotel bills for those who are good and kind enough to trust their precarious lives to them, but will often secretly, I suspect, return to them their railway fares. Golden age for mountaineers and amateur climbers! And what is to become of the *professional guides*? you will perhaps ask. Well, the grandchildren of the Burgeners, the Almers, the Dévouassouds will sit at the excellent tables d’hôte of the heirs of Seiler, Boss, and Couttet, whilst our grandchildren will take their modest meals in the well-known cosy little rooms for guides. The world is round and must turn!

THE TOUR OF KINCHINJINGA.

THIS long-desired and important piece of mountain exploration has at length been carried out by one of the native explorers attached to the Indian Survey Department. The pass crossed was the Jongsong La. It is shown in the sheet of the Transfrontier Map, just added to the Geographical Society's collection, as about eighteen miles north of the great mountain.

The pass had been previously reached (from the west) by another native explorer but not crossed. It connects two points visited by Sir J. Hooker, Khambachen on the west and Zemusamdong on the east, and leads from the sources of the Khambachen river to those of the Zemu. It is 'about 20,000 feet' in height. In the ascent five miles of moraine (glacier covered with débris?) and four of glacier were met with. No mention is made of the rarity of the air. 'This pass,' writes the native explorer, 'cannot be crossed unless assisted by some fifteen men in making a passage.' He crossed, however, in the middle of November, and had to transport a companion who had fallen sick at Khambachen. The time occupied from Khambachen to the pass was six days. On the descent an excursion was made to another pass, the Nuijin Sángra, lying farther north, and it is not possible to ascertain from the narrative the number of days spent on the direct journey. Nearly three weeks were spent in all between the Jongsong La and Zemusamdong. Provisions fell short, and two of the party died from fatigue and cold before reaching that place, at the junction of the Zemu and Thlonok rivers. The latter flows from an enormous glacier on the north-east flank of Kinchinjinga, and at its head, according to the Transfrontier Map, is a pass of 21,000 feet leading over the main chain of Kinchinjinga, only *four miles* from its highest peak. This route, part of the true 'High Level Tour,' remains to be explored. Its importance to an ambitious mountaineer need hardly be pointed out.

The foregoing facts have been gleaned from the explorer's narrative published in the 'Report of the Indian Surveys, 1884-5,' p. xlvi. Subjoined are the official summary of his tour and a note appended to it by Colonel Tanner, both from the same volume, pp 55 and li.

'Our knowledge of the hitherto sealed region north of Kinchinjinga has been considerably extended by the explorations of R— N—, during the year under report. After suffering great hardships, and losing two men from excessive cold and fatigue, he completed the very arduous undertaking of a circuit round Kinchinjinga, and we now have not only a sketch of the whole of that great mountain and the spurs and valleys that emanate from it, but also a delineation *for the first time* of the boundary between north-eastern Nepál and Tibet. R— N—'s sketch is a continuation (north-westwards) of Mr. Robert's work in North Sikkim and (north-eastwards) of Hooker's in Eastern Nepál. The explorer has fixed the noted peak of Nuijin Sángra between Kinchinjinga and Shigátze, and verified the position of Khámba Jong as determined the year previously by his cousin the Lama; and to the north-east, far away on the bank of the Brahmaputra, he saw the great snowy

mountains of which the two most prominent were observed by Hooker from Bamtso (Bhomtso), but of which none have as yet been fixed by explorers. R—— N—— also completed the sketch of the Zemu river, and rectified some names which had been erroneously accepted before. He crossed from the drainage of the Tambur river into that of the Teesta by the Jongsong La Pass, which the Lama, who had previously ascended it, stated to be the highest pass he had ever encountered. The explorer met with many glaciers in the northern valleys, and this contradicts the statement as to the non-existence of these glaciers made in Colonel Tanner's report of last year, which was evidently based on erroneous information.'

'The route described by R—— N—— was some years previously followed by Babu D. C. S., and the Lama W. G. At that time the Lama was ignorant of surveying, and besides the journey was made under most trying circumstances, when snow fell daily, so that, even had he known how to take them, observations could hardly have been made. The route, however, was plotted and the map published, but the errors of the Lama's distances and angles were sufficient to throw the position of the Jinsong La and Chhorten Nyima Passes many miles to the west. The Lama has crossed and measured the height of over ninety passes, and he informs me that he thinks the Jinsong La or Jongsong La is the highest and most difficult he ever attempted. In the first edition of the sketch map of North Sikkim by Mr. Robert the name Jinsong La has been placed opposite a wrong pass, from erroneous information supplied to that gentleman by his guides. A second edition of this sketch map will contain a number of corrections, and all the new geography to the north-west of Kinchinjinga by R—— N——.'

H. C. B. T.

It may be interesting to some of our readers if we mention here that a considerable collection of Colonel Tanner's Himalayan sketches are now exhibited in the southern hall of the Indian Court at the Indo-Colonial Exhibition. The panorama from Sandakphu is not among those shown.

THE PASS OF HANNIBAL.

Further Notes, by DOUGLAS W. FRESHFIELD, Sec. R.G.S.

Historians! Lackaday! if they had ta'en the pains to satisfy their own eyes, instead of following each other's blind guidance.—*The Antiquary*.

Truth is better than error, were it even 'on Hannibal's vinegar.'—*Carlyle*.

THE theory I ventured to put forward three years ago* in these pages with respect to the Pass of Hannibal has been, not unnaturally, slow in making any way in this country. Scholars and schoolmasters looked with instinctive distrust on a critic who was not one of themselves, and who was doing his best to reopen a tiresome discussion in

* Vol. xi. p. 267.

which they had most of them already committed themselves *coram populo*. They had told their pupils that Hannibal crossed the Little St. Bernard, and the demand that they should consider the claims of a pass they had never even heard of before seemed exorbitant. One of my readers—can he have been an A. C.?—with just the dangerous amount of knowledge pretended to be seriously insulted at being required (as he thought) to believe that elephants had crossed the Col d'Argentière, in the chain of Mont Blanc.

Time, however, has brought its revenge. Mr. W. T. Arnold, in an elaborate and judicial discussion of the whole question appended to a new edition of his grandfather's chapters on the 'Second Punic War,' has recapitulated my principal arguments and practically agreed in my main conclusion. 'On the whole,' he sums up, 'the chances of the Mont Genève and the Col de l'Argentière have decidedly improved. I should be disposed to go even further, and to say that Mr. Freshfield, who has the advantage of being the last man to review the whole question in the light of his predecessors' labours and of his own personal experience, at present holds possession of the field.'

In a minor matter—my attempt to harmonise Livy and Polybius—Mr. Arnold is less favourably impressed. I maintain that, having regard to the broad and vague way in which Polybius divides the march into sections—the Rhone country, the ascent (*ἀναβολή*) of the Alps, the passage (*ὑπερβολή*) of the Alps, the plains of the Po—and to such particular expressions as *τοὺς Κελτοὺς τοὺς παρὰ τὸν Ῥοδανὸν ποταμὸν οἰκοῦντας*, where 'dwelling along the river Rhone' clearly has a very wide meaning, we are justified in believing that the Greek writer included the ground as far as and beyond Grenoble in his first or Rhone-country section. Again, I say that, taking into consideration the leading part played by the Allobroges in the early history of southern Gaul and their prominence in Roman literature, there is nothing incredible in the supposition that their chiefs should have taken, or have been described by Polybius as having taken, a leading part in a battle fought as far south as Gap. It is in the nature of barbarians to attack a foe on his retreat rather than at the point of his farthest advance; and Hannibal's turn southwards would, from the Allobrogian point of view, have been a retreat. Mr. Arnold, however, considers these two suggestions 'assumptions with which a sound criticism can have nothing to do.' I should be disposed to reply that they are assumptions which a short-sighted criticism will certainly stumble at, but which will recommend themselves more and more to those who consider the general bent of Polybius's mind as shown in his works, or who look at parallel cases in recent history, such as, for instance, the use of the word 'Circassian' in descriptions of Russian warfare in the Caucasus, or of 'Arab' in French campaigns in Algeria and English in Egypt.

Abroad, where there are more professors with less to do, the grand old controversy has raged intermittently since I last wrote, and the claims of the Col de l'Argentière have received their full share of attention. I propose to notice particularly one of the more recent treatises, which deserves special attention as coming from an alpine student.

Dr. Dübi, the President of the Bern Section of the Swiss Alpine Club, has recently published, in the 'Jahrbücher' of his Society (vols. xvi., xvii., xix., and xx.), a series of interesting and instructive articles on the early history of the Alps. Beginning in 1882 with a collection of the references to the Alps in classical authors, he proceeded in the following year to a short summary of the Roman campaigns in the mountains. He is now engaged on the Roman roads in the Alps, and has in two papers completed his task so far as the Western or Gallic Alps are concerned. All who are interested in the subject will compare curiously the opinions arrived at by Dr. Dübi with those of other recent writers; for example, with the ingenious but somewhat fanciful views of Signor Vaccarone and the painstaking literary (but never local) researches of Herr Ehlmann.*

Dr. Dübi naturally has been unable to avoid the interminable controversy on the Pass of Hannibal; and, since alpine readers may by courtesy be supposed to be well read on that topic, I shall venture an endeavour to render clear the points on which he differs from the views recently set forth in these pages, and the grounds on which I am disposed to maintain, with some exceptions in points of detail, my previous conclusions † It would obviously be impossible in the space at command here to follow Dr. Dübi in the many points on which we are agreed. I must therefore submit to run the risk of making disproportionately conspicuous our points of difference—in reality minor points, for we are both agreed on the valley of the Durance as Hannibal's route.

Dr. Dübi, after balancing the claims of the Mont Genève and the Col de l'Argentière, gives the preference to the former pass as Hannibal's, assigning the latter to Pompey on his march to Spain in B.C. 67.

Dr. Dübi allows that the researches of Wölflin and Luterbacher have led to the conclusion that Livy, in his 'description of the passage of the Alps, follows in the main Polybius.' But he declares that my attempt to reconcile Livy and Polybius has left him unconvinced. Livy, he says, added many details from a second authority. That he did so, and in one instance, at least, fell into confusion in so doing, is part of my argument. Thus far we are at one. Where we differ is that, while Dr. Dübi holds that Livy's second authority or authorities disagreed with Polybius as to the pass crossed by Hannibal, I hold that both described the same pass, and disagreed only as to matters of detail. Dr. Dübi follows—blindly, as I think—certain German critics and Mr. Capes in assuming Livy's second authority to have been Coelius Antipater, who took Hannibal among the Salassi. Coelius, says the English critic, was used by Livy because, as he wrote one hundred years after the events, his works were less troublesome to consult than those of the contemporary chroniclers, and therefore more attractive to a picturesque and careless historian. A very pretty hypothesis if there were no evidence in the case; but, unluckily for the argument, Livy has himself been singularly explicit as to his

* *Le Vie delle Alpi Occidentali.* Turin: Candeletti. 'Die Alpenpässe im Mittelalter,' *Jahrbuch für Schweizerische Geschichte*, III. and IV. Zürich.

† See *Alpine Journal*, vol. xi. pp. 267-300.

authorities. In the very passage * in which he contradicts Cœlius, the historian tells us that he has consulted the older chroniclers; in the same book † he twice again contradicts Cœlius each time with a reference to an older author. In the next book in his account of the battle of Lake Trasymene he again refers to a contemporary narrative.‡ Surely in the face of such references this theory of Livy's dependence on Cœlius becomes untenable; and once more, how could Livy have copied from the upholder of a pass leading through the Salassi a string of names only reconcilable with one of the passes of the Durance? §

I believe the second authority of Livy to have been one or more of the contemporary writers to whom he so frequently refers, possibly, though not necessarily, Alimentus; for I cannot agree with Dr. Dübi that the fact that Livy sets aside the figures of Alimentus in a single instance and for a special reason is a proof that he did not consult this author on other points. The words 'maximè auctor me moveret' show Livy's general estimate of Alimentus, and are directly opposed to Dr. Dübi's hypothesis. Moreover, any such argument must *à fortiori* prove fatal to the claims of Cœlius, the chronicler suggested by Dr. Dübi as Livy's principal authority, for he is bluntly contradicted by Livy on the central point of the whole narrative—the pass crossed.||

Dr. Dübi commits himself to no decided opinion as to Hannibal's route from the confluence to the Durance. I have, however, to thank the Swiss writer for bringing forward the opinion of the French Archæological Commission that the route up the Drac and over the Col Bayard was a Roman road, and one of those indicated in the Peutinger Tables. Here we have an important confirmation of the position I have asserted against many critics that this was one of the classical, as it is certainly one of the natural, routes between the Isère and the Durance.

I now turn to the descent into Italy. On this question I think Dr. Dübi has thrown some fresh and valuable light; at any rate, he inclines me to follow him. He does not hold it by any means necessary, in order to satisfy the statement of Polybius, 'that Hannibal, having crossed the Alps in fifteen days, descended boldly into the plains of the Po and the nation of the Insubrians,' to believe that Hannibal met with Insubrians before he encountered the Taurini. Polybius, he considers, was looking forward, and writing in his broad manner passed over for the moment the fight with the Taurini. This is a very plausible conjecture, and consistent with the tendency I had previously noted in Polybius to take from time to time general views

* Book xxi. ch. 38.

† Ibid. ch. 46-7.

‡ I will take this opportunity to say, parenthetically, that, knowing the ground, I have no doubt the battle was fought between Passignano and Torricella. When the new contoured Italian Survey is published students will be able to see why.

§ See Introduction (p. xli.) to Books xxi. and xxii. of *Livy*, by Rev. W. W. Capes (1883). This edition retains the passages in which, as I have already pointed out, plausible grounds for the Little St. Bernard theory are provided by palpable, though obviously innocent, misstatements of physical facts. See *Alpine Journal*, vol. xi. p. 268.

|| xv. 10.

of the march. Were it otherwise, continues Dr. Dübi, the Col de l'Argentière as well as the Aostan Passes would be excluded; for both Vagienni and Salassi were Ligurians. And that Livy, he thinks, so understood Polybius, may be gathered from xxi. 38, where he adopts the reading 'Taurinis proximæ Galliæ genti in Italiam degresso' with the remark, 'Freshfield meint mit Unrecht dass die Stelle corrupt sei.' In this matter it is Dr. Dübi who is wrong. Many commentators have exhausted themselves in suggestions to replace the diverse and unintelligible readings of the manuscripts. Madvig has suggested what seems to me the worst,* while Mr. Capes (in his notes) expresses a preference for 'proximæ Galliæ genti.'

It will be noticed that I give up the argument I had based on the passages in the ordinary text of Pliny, which point to an Insubrian descent for some at least of the Vagienni.

The tribe are generally spoken of as Ligurian; yet since Pliny writes of 'Vagienni Ligures, et qui montani vocantur,' it might plausibly be urged that the mountain tribe were *not* Ligurian. But the passage on which I relied for their Keltic connection, 'Vagienni a Caturigibus orti,' breaks down on further examination. 'Caturigibus' is a doubtful reading. I desire, therefore, to withdraw my comment on these words. Even if we do not accept Dr. Dübi's suggestion that Polybius included the episode with the Taurini in the Passage of the Alps, it will be safer and sufficient to fall back on the undoubted general fact that the valleys on both sides of the Alps were inhabited by many minor Keltic tribes, and that Hannibal may easily have found friendly natives for his first camp, whether in the neighbourhood of Demonte or Susa, before he entered on the territory of the Taurini.

And here I may note that the classical authorities all point to an ethnological conclusion, which is singularly borne out by observations any traveller who explores the South-western Alps may make for himself. From the sea northwards, under the eastern slope of the Alps to the foot of Mont Blanc, the ancient territory of the Vagienni, Taurini and Salassi, spread a short, sturdy, dark, active race—the modern Piedmontese. Here and there in remote valleys on the E., generally on the W., of the chain are found tall, fair, softer folk. I may take as an example the people of Tignes, in the heart of the Graian Alps, where the traveller sees before his eyes the living representatives of the Gallic captives figured on Roman monuments.

To return to the main argument. Varro's catalogue of the passes still stands in Dr. Dübi's way. Like all critics who reject the Col de l'Argentière, he is bound to overthrow or disparage it. He does his best to this end in a lengthy and minute commentary, the conclusion of which is that the catalogue is 'only a literary product,' by which somewhat vague phrase I suppose him to mean that it stands in no close relation to physical and historical facts. I shall endeavour to give accurately (in italics) the heads of Dr. Dübi's argument, with such running commentary of my own as it may seem to call for.

Varro was an encyclopædic author, more remarkable for industry

* 'Taurini Semigalli proxima gens erat in Italiam degresso.'

than critical perception. Freshfield is hasty in thinking that he had local knowledge, or that he crossed with Pompey the Western Alps. It was in the Civil War, not in the Sertorian, that he served as Pompey's lieutenant, and he may then have sailed to Spain and back.

Varro's literary reputation I may well leave to take care of itself.

On the last point I stand corrected, but it has little importance. Varro's intimacy with Pompey was far too close for him to have been misinformed as to his friend's alpine route, and Varro must have known the Western Alps. We learn from the *De Re Rusticâ* * that he had commanded an army in Transalpine Gaul. Again, he speaks of the amount of labour required 'in agro Ligustico montano,' † and of the covered threshing-floors of the Vagienni.‡

It is highly improbable and contrary to the indications of Livy and other authorities that Hasdrubal used a different pass from his brother.

Dr. Dübi here fails to take into account the fact that Hasdrubal's line of march from Spain up to the Alps, and again beyond them, was certainly different from Hannibal's. If the two routes were identical in the Alps, it was the only point in which they coincided. Hasdrubal passed the Pyrenees at their western end, and then crossed the territory of the Arverni (Auvergne) to the Rhone. Naturally, therefore, even if Varro had never written, we should look for him on a more northern pass. The phrases of Appian, Silius Italicus, and Eutropius are quite vague, and cannot properly be taken to show more than that Hannibal and Hasdrubal both crossed the Gallic Alps.

'The five passes of Varro are thus reduced by one,' writes Dr. Dübi triumphantly. But he forgets that the five passes of nature, the five passes pointed out by the Piedmontese staff, the five modern carriage passes of the Western Alps, are not 'literary products,' and cannot be mutilated by any literary treatment. And surely the strongest of all arguments in favour of Varro's catalogue is that it is in accordance with immutable physical facts.

Dr. Dübi comes finally to deal with Pompey's Pass, a crucial point. What we know about it is contained in Pompey's own statement that it was different to, and for him (nobis) more convenient than, Hannibal's; and Appian's statement that it lay between the sources of the Po and the Rhone—that is, led from the basin of the Po into that of the Rhone, if the critics would only adopt the reasonable meaning of the words.

Varro, Livy, and Strabo tell us that the prevailing opinion of the time—and therefore Pompey's opinion—was that the Carthaginians crossed the Taurine (Mont Genève) or Pennine Pass. But Varro, if we read him straightforwardly, and I have given my reasons for so doing, § puts forward the second pass from the sea, that is, the Argentière; Livy mentions the belief in the Salassi Passes as a vulgar error founded on a single narrative; || and Strabo gives a description which

* C. vii.

† C. xviii.

‡ C. li.

§ Vol. xi. p. 281.

|| Mr. Capes's comments on this passage (p. 312) seem to me, in the presence of the words 'inter omnes constat,' hardly warrantable. 'Auctores' is clearly the substantive understood.

will suit almost equally well the Mont Genève or the Argentière. There is therefore no reason to suppose that Pompey believed Hannibal to have used either the Great St. Bernard or the Mont Genève; the only conclusion to be drawn fairly from his words is that his pass lay not very far from Hannibal's.

The Col de l'Argentière was nearer the Viæ Aurelia and Postumia, leading from Liguria into Gallia Cisalpina. Before the coast road was made the road from Savona to Cuneo, and over the Col de l'Argentière to Barcelonnette, was the shortest for a general on the march from Rome to Spain.

This argument involves the very considerable assumption that of the three roads to Gaul mentioned by Cicero,* that by the east coast, that through Etruria and over the Apennines, and that by the west coast to Genoa and Savona, Pompey chose the last. I know of no authority to this effect, and the probabilities are surely against it. Roman armies moved generally by the eastern road. Pompey had returned to Rome from a campaign in Cisalpine Gaul and the capture of Mutina. Had he left none of his men or his material there? Unless he can be proved to have marched by the Mediterranean, he would have gained little or nothing by taking the Col de l'Argentière in preference to the Mont Genève.

Other arguments of secondary but still of appreciable weight might be alleged for adhering to the old belief that the Mont Genève was the pass opened by Pompey. After Augustus had pacified the Alps he recorded on the trophy which gives its name to the modern Turbia the names of the tribes he had subdued. Twelve communities in the kingdom of Cottius, which we know extended on both sides of the Mont Genève, were, Pliny tells us, omitted from the list as previously tranquillised. Is it not more likely that Pompey's route lay in this direction than among the turbulent tribes to the southward, whose names are recorded on the trophy, and whose subjugation was deferred until some years after his passage? Was it not Pompey's road which Cottius 'made more passable at great exertion and cost'? †

Weak arguments, buttresses which hardly bear their own weight, do more harm than good to the theory they are meant to support; but the considerations adduced above seem to me, if far from decisive, yet worthy of serious consideration. One argument of the same sort might be brought forward on the other side; and, though Dr. Dübi does not avail himself of it, I think it fair to set it out. The town known as Alba Pompeia lies on a natural line of approach to the Col de l'Argentière.

So far as I can see, however, there is much difficulty in transferring Pompey from the Mont Genève. Dismiss from your mind Pompey and Varro, and I agree with Dr. Dübi that it is easy enough to make a strong case for the Mont Genève as Hannibal's Pass.

Dr. Dübi's final article (vol. xx.) appears to me to be in the main a sensible and satisfactory recapitulation of what we know of the ancient history of the Mont Cenis, the two St. Bernards, and the Simplon. I will not dwell on minute corrections or points of differ-

* *Phil.* xii. 9.

† Strabo, iv. 1; Ammianus Marcellinus, xv. 10.

ence. One comment, however, I must allow myself. I am at a perpetual loss to conceive how Dr. Dübi and many other critics of high intelligence can continue to lay stress on the 'Cremonis jugum' of Livy, xxi. 38. The reading is a disputed one—has been disputed since the days of Heinrich Moriti, otherwise known as Glareanus, who in A.D. 1552 declared that the 'vetustiores codices' read 'Centronis.' And there are three other passages in the same short chapter in which the critics accept without a scruple very bold emendations—e.g. 'Taurini Semigalli' for Taurinis ne galli, 'per alios montanos' for 'per saltus montanos,' and 'Seduni et Veragri' for 'sed uno vel acri.' In the face of these facts and of the general character of the MS. of Livy, of which Mr. Capes says 'it would be quite hopeless to adhere even to the best MS. authority,' it is surely time that attempts to base any hypothesis on the identification of the 'Cremonis jugum' with the Cramont, Gramont,* or, as it is spelt in the new Survey of Italy, Crammont, a minor summit between seven and eight miles as the crow flies from the 'col' of the Little St. Bernard, were finally abandoned. 'Centronum jugum' seems to me a very reasonable correction, but whether this is allowed or not 'Cremonis' has a good deal more to do with Cremona than it has with Cramont.

I couple with this notice of Dr. Dübi's papers a brief reference to a summary of recent contributions to the controversy in hand which has been furnished by Professor Schiller to the 'Berliner Philologische Wochenschrift.' † Professor Schiller analyses my paper in this Journal together with the works of the late Professor Neumann ‡ and two French officers—Perrin and Henzebert. §

Of these writers not one is in favour of the Little St. Bernard. Colonel Perrin is a partisan of the Mont Cenis with variations, or, to speak more precisely, of the Col du Clapier (8,125 feet), a neighbouring bye-pass to which he has been reduced by the necessity he feels of finding a view of Italy. Like all Mont Cenisians, Colonel Perrin begins by throwing Livy overboard—a convenient but to my mind wholly illegitimate mode of simplifying the problem. Those, however, who can overlook this preliminary license will find the task of fitting Polybius to the Arc valley worked out with great ingenuity and a thorough knowledge of the ground; and, whatever influence it may have on the main question at issue, Colonel Perrin's book will doubtless be of value to students desirous to trace the old roads from the valley of the Arc to Italy. The line he selects for the Carthaginian army is by Aiguebelette and Montmélian to the Isère, thence across the hills by the Col de Montaudrey and Col du Pontet to the Arc at La Chambre, and up the right bank of the river through Villarey, Bourget, Amodon, and Aussois to his pass. His 'White Rock' is near the latter village. I

* 'Gramont oder Cramont (Grand Mont),' in Herr Ivan von Tschudi's excellent *Turist in der Schweiz*, 1886.

† June 7, 14, 21, 1884.

‡ *Zeitalter der Punischen Kriege*.

§ *Marche d'Annibal des Pyrénées au Pô*. (Privately printed at Grenoble, and practically unattainable.) *Vie d'Annibal*. 2 vols.

agree with Mr. T. W. Arnold that 'the only serious argument for the Col du Clapier is its view of Italy,' and that this is not sufficient to counterbalance the many objections to it. 'Colonel Perrin with his Col du Clapier I do not regard as a serious rival,' adds Mr. Arnold, with my full assent.

Professor Neumann and Hennebert are both for the Mont Genève. The former brings forward many of the arguments already familiar in favour of a march through the valley of the Durance. The new suggestion he makes is his attempted reconciliation of Polybius and Livy as to the tribe among whom Hannibal descended.

He, with Dr. Dübi and Mr. T. W. Arnold, whom he anticipated, believes that Polybius, when he stated that Hannibal descended 'into the plains of the Po and the Insubrian nation,' regarded his conflict with the Taurini as part of the passage of the Alps, and that Livy understood him in this sense.

Hennebert's peculiarity lies in the descent he adopts from the Mont Genève. He takes Hannibal over the Col de Sestrières and down the Clusone to Pignerol. The motives alleged for this fanciful route are the influence of the chieftain Magilus (identified as head of a tribe of Magali in the Clusone valley) and the desire to avoid debouching directly on an enemy's town—Turin.

With respect to my own contribution, I desire to correct Professor Schiller in one point where he has missed my meaning.

On page 771 he assumes that I have failed to notice that $8\frac{1}{2}$ of Polybius' stades in place of 8 = the Roman mile, and argues that if the smaller stade was used 'all Freshfield's apparently brilliant correspondences in distance collapse.'

Professor Schiller has missed my foot-note (vol. xi. p. 271), which would have shown him that he and I are in reality entirely agreed in the conclusion, which must, I think, be that of every sensible or even sane man—sanity is not an universal quality in writers on this subject—a conclusion he has himself excellently expressed: 'The worth of all these arguments which deal with distances and the length of marches is more than problematical.' What I wrote was: 'The stade of Polybius is said to be somewhat less than the eighth of a Roman mile. But I may take this opportunity of saying that in my opinion—and here Mr. Bunbury agrees with me—exactness in distances has been made too much of in this discussion. An accurate measurement in a mountain country is a late result of civilisation, and rough estimates are, as a rule, exaggerated.' So much for my own opinion of 'brilliant correspondences.'

I would repeat that this caution may, in my judgment, be profitably extended to other incidents of the march. The pass to be looked for should not exactly correspond with but be less difficult (to our eyes at least) than that described by the classic authors. In historical descriptions of mountain campaigns, no matter of what date, the difficulties of the ground are almost universally grossly exaggerated.

Should any of my readers be tempted themselves to perambulate the passes I would give them two warnings. Let them try to put the modern highroad out of the field of view: let them follow out the old

tracks; at any rate study Brockedon's description of them. In particular they must remember that the final descent from the Col de Vars and the path through the *Barricate* took a different line from the present roads. Further, if they do not want to be arrested let them have their passports always at hand. Thanks to having previously warned the French authorities that my investigations, though military, were purely retrospective, I escaped their attentions. But the first night I slept in Italy (at Vinadio) I was visited by a trio of soldiers—a sergeant and his men—with a lantern and muskets, and had to exhibit my passport for their satisfaction.

Professor Schiller's general conclusions are (to me) thoroughly satisfactory. He holds that the passes from the Durance are winning their way to acceptance; that the Little St. Bernard has been fairly disestablished; and that *if* the passage from Varro I quoted is genuine and trustworthy—a point he leaves open—the case of the Col de l'Argentière is made out.

After carefully considering these fresh contributions I still hold that as between the Mont Genève and the Col de l'Argentière the evidence, putting aside Varro, is very closely balanced, but that the scale inclines in favour of the southern pass. If we admit the passage from Varro, and assume that he was writing exactly, the question is, of course, solved. And Dr. Dübi's assault on Varro's statement appears to me singularly ineffectual; but on this point I am prepared to bow to more competent scholars than myself. For, while I protest with the most positive conviction against all the northern passes, I cannot work myself into more than an advocate's partiality for the Argentière over the Mont Genève. I fully admit that the passage from Varro may be impugned, and that if it were once out of the way some stress might fairly be laid on the fact that the Mont Genève seems pre-eminently the Taurine Pass. To make this confession, however, I fear is to show that I do not possess the first qualification for a Hannibalian critic—a perfect belief in my own infallibility!

Before laying down my pen let me indicate in a final sentence the probable outlines of the story of the Durance Passes as they have presented themselves to me in the course of this inquiry.

The Keltic hordes poured down through Gaul till they came to lands already occupied, and ill-suited for pasture.* The fame of Italy led many of their tribes up the valley of the Durance. When they reached its angle, unwilling to turn their backs to the sun, they held straight on over the broad downs of the Col de Vars and up to the gentle crest of the Argentière. For centuries this remained—it remains to this day—a natural and frequented highway for the people on either side of the chain. Then the Romans, masters of the valley of the Po, approached the eastern base of the Alps, and, no longer content with sailing over sea, sought a highway to the Province and Spain. The broad trench from which the Dora Riparia issues—next to Monte Viso the most conspicuous physical fact in the view from Turin—led their

* See Livy, v. 34.

generals on to the discovery of the Mont Genève and, when they wanted to go north—to Gallia, and not to Hispania or the Provincia—of the Mont Cenis. The Argentière lost much of its importance after the opening of the Mont Genève, as the Great St. Bernard has lost its importance by the construction of the Simplon road. In mediæval history it flashed out again into temporary notice, and then its very existence was ignored by the Dryasdusts who construct orography in their cupboards. Yet military engineers are still alive to its importance, and every year hundreds of sturdy Piedmontese, descendants of the old Ligurian stock, pour backwards and forwards over it on their way to and from their winter work in the cities of Provence.

By general request I have added a physical map of the Western Alps. I have inserted in it very few names—only those found in the narratives of Polybius and Livy and the modern names of the passes brought into question. Had the map given by Mr. Arnold's publishers been satisfactory I should not have indulged my readers with this luxury; but it fails altogether to exhibit the details of the Col de l'Argentière route; and it also gives such prominence to many unclassical additions to alpine scenery and topography (e.g. railroads) that the reader will hardly gain from it what he needs—a conception of the country in its primitive condition.

The only contestable indication in my map, I believe, is the position assigned to the Tricastini, between the Drôme and Isère. In this I follow Ptolemy, who places them east of Valence, and among the moderns Mr. Long and Herr Müller.*

Those who desire large-scale maps of the particular passes should procure the French *Carte Militaire de la Frontière* (2s. a sheet) and the new Italian Survey (1s. a sheet) at Stanfords'.

The heights of the passes over the main chain referred to are, according to the official surveys: Col de l'Argentière, 6,552 feet; Mont Genève, 6,082 feet; Petit Mont Cenis, 7,220 feet; Petit St. Bernard, 7,180 feet.

ALPINE NOTES.

A NEW ROUTE ACROSS THE ITALIAN LAKES.—The old road across from Maggiore to Como (Luino, Ponte Tresa, Porlezza) has been degraded to a tramway. Travellers may be glad to know of another not mentioned in the handbooks. There is a very pretty country road from Laveno opposite the Borromean Isles to Ponte Tresa (2½ to 3 hours' drive), passing through a fertile valley and then crossing a high ridge with a steep and beautiful descent on the Lake of Lugano. The steamer may be taken to Bissone. There a light carriage (telegraphed for in advance) should be in waiting (unless the travellers prefer walking), for the ascent to Lanzo (some 3¼ hours). The road is good as far as Arogno, rough beyond. The scenery on the ascent to Arogno is lovely. A deep gorge with waterfalls lies on the right, and above it

* See also *Alpine Journal*, vol. xi. p. 272.

THE PASSAGE OF HANNIBAL.

Hannibal's route to the island & beyond the Taurini

ALPINE ROUTES.

- Col de l'Argentière.....
- Mont Genève.....
- Petit Mont Cenis.....
- Colonel Perrin's variations.....
- Petit St Bernard.....

English Miles
25

50

43

Greek Stades

0

100

200

300

9

Edw^d Waller del.

rise the fine cliffs of Monte Generoso, forming a landscape of exceptional grandeur for this region. Beyond Arogno a magnificent fountain leaps in a cascade out of the cliff and turns several mills.

The scenery then becomes more confined until, after a long struggle up through a narrow defile, the track emerges suddenly on wide smooth meadows sloping eastwards, and the village of Lanzo appears half a mile to the left. A further drive of three-quarters of a mile by a level road brings the traveller to the end of the meadows. Without warning he finds himself looking down lofty cliffs on the Lake of Lugano, and across the bay and town, backed by Monte S. Salvatore, to Monte Rosa. Here stands a large and much-frequented pension. When it is closed (late in September), the Caffè Centrale in the village supplies fair accommodation. Two good car roads lead through beautiful valleys to Argegno on Lago di Como and Osteno on Lago di Lugano in $2\frac{1}{2}$ hours from Lanzo or the pension.

D. W. F.

MAPS AND HUTS IN THE EASTERN ALPS.—The Imperial and Royal Military Geographical Institute of Vienna will correct this summer certain sheets of the Austrian map—viz. Zone 22, Col. III. and V.; Zone 21, Ccl. III.—VI.; Zone 20, Col. V. and VI.—and ask those members of Alpine Clubs who are disposed to make suggestions as to the nomenclature, &c., to send them to the Central Committee of the German and Austrian Alpine Club, 51 Neuhauserstrasse, Munich, which will communicate them to the Institute. These sheets contain the Adamello and Brenta groups and a part of the Dolomites, which are known to be incorrect in the Austrian map; and it is very desirable that mountaineers should take this occasion to correct those faults.

The highest continually inhabited house in Europe will soon be the house on the top of the Hoher Sonnblick (3,103 m. = 10,181 ft.), in the Hochnarr group. On this summit the German and Austrian Alpine Club are about to build a house, which will be entrusted to the Meteorological Society of Vienna for use as an observatory; it will be used besides as a 'refuge' for tourists. The observer will remain summer and winter on the summit, and communicate by telephone with the next place in the valley, Kolm-Saigurn (1,597 m.), whence the telephone will go to Rauris. The Sonnblick house will be opened on August 1.

The valley of Rauris is historically one of the most interesting parts of the Alps, and the Hochnarr group is, I believe, the only group of the Alps in which it can be proved by documents that in the fourteenth and fifteenth centuries there were no glaciers.

A. LORRIA.

THE HIGHEST MOUNTAIN IN THE WORLD.—A HINT TO HATTERS.—In the recently published volume (p. 88) of 'Supplementary Papers' of the Royal Geographical Society, Mr. Baber gives the following curious paraphrase of an ancient Tibetan poem. It may be worth quoting as an instance of appreciation of mountain scenery among a primitive people, and also perhaps as conveying a hint to those who crown the costume of some of our Alpine Tartarins. 'Le Chapeau Mont Blanc' and 'Le Chapeau Dru' could hardly fail of success.

'A beggar orders a hat from a tailor, who, after exhibiting all manner of hats, Chinese, Mongol, Indian, and what not, and finding them

persistently rejected, abruptly asks the beggar what mountain peak he would prefer as a model for his headgear. Peak after peak is cited and described, but the beggar is inexorable until Mount Tisé is mentioned, which is presumed to be the highest mountain in the world and most regularly moulded (it lies N. of Lake Manasorava*). Then comes the question of material: all the looms in the world are set at work to furnish silk and cloth, all the steppes of Asia are explored for felt. But the beggar will have none of them. Nothing will please him but the sward of a pasture for stuff, the foam of a waterfall for tinsel, and a green sunlit forest for a jewel on his frontlet! Thereupon the tailor (I have forgotten to remark both are spirits) enumerates one by one famous rivers, forests, and pastures, and at length suits his customer with I know not what paragons of Himalayan beauty.'

AN ASCENT IN THE LESSER ATLAS.—Mr. D. Freshfield sends the following note:—

'In May last, after visiting the romantic gorge of the Châbet el Akra, I crossed with François Dévouassoud the Kabyle Highlands from Bougie, a seaport between Algiers and Philippeville, to Dra el Mirzan. The first two days' walk, in great part over rough tracks through very picturesque forest scenery, brought us from El Kseur by Taourirt Iril, Tiflit, and Djema-Sahridj to Fort National, as the Fort Napoleon of local history is now called by Frenchmen. Thence we made our way across the hills of the Beni Yenni to the foot of the central block of the Jebel Jurjura, "le massif des Ait Inguen," a group of bold limestone peaks at this season well snowclad. Penetrating a hidden valley, unmarked in any published map, we found a hamlet (about seven hours from Fort National) close to the foot of the principal peak, and after some little difficulty, owing to there being no guest chamber in the village, secured a night's lodging. Starting next morning at 3.15 A.M., we gained in three hours the top of Ras Timedonine (according to the map in Joanne's Guide), 3,203 mètres, or 7,556 feet. This is the second peak in the Jurjura and the third in Algeria. A small pile and several rings of stones on the crest showed that it had been visited at least by shepherds. It may also have been climbed by surveyors. But, so far as I know, no account either of the peak itself or of the part of the range in which it is situated has been published either in the Guides to Algiers or in the special treatises prepared for the recent visit of the French Alpine Club to the neighbourhood. A mule pass, one of the most important in the range, leading over west of the peak to Bordj Bouira, and a fine cedar forest on its southern spur, appear to be equally undescribed.

'The climb was free from difficulty, the cliffs, which in distant views look formidable, being breached by a commodious couloir. The view from the summit embraced an enormous extent of country between the sea and the Sahara. Algiers itself, sixty-five miles distant, was conspicuous. I feel sure that it is this summit and not the sixteen feet higher and more easterly Lalla Khedidja which attracts attention from

* This is a real lake and the legendary source of the great Indian rivers. See *Asiatic Researches*, vol. xii.

Algiers. Our peak is easily recognisable by a bold rock aiguille which flanks it in all views from the north-west. We descended the first 1,000 feet by glissades, and regained the village in an hour and a half. Thence we pursued our journey in a westerly direction, crossing two high spurs of the Jurjura, between which lay a small upland valley with villages. From the second col a steep and long but very picturesque descent led to the foot of the mountains. Crossing several miles of bare, undulating country, we gained in about five hours from the village the native coffee house on the track from Fort National to Bordj Boghni and Dra el Mirzan. We reached the former place (where there is a fair inn) before sundown.

'When the new Survey of Algiers (1:50000) reaches Kabylia I hope to be able to give a more detailed description of this very beautiful region. At present the local names are difficult to obtain correctly. I have taken the heights and names here given from the "Itinéraires de la Grande Kabylie," prepared by M. Ficheur, of the Club Alpin Français, for his colleagues. It contains no description whatever of the heart of the chain, the peaks, passes, and valleys of the Ait Inguen.'

CAUCASIAN TRAVEL.—M. Déchy writes from Pätigorsk, July 10:—'I found my marks and stone wall erected last year at the foot of the Ceja Glacier showed that the ice had retreated very considerably. I took new measurements, and we have now the first precise observations of glacier movement in the Caucasus. The upper icefall was in a worse condition than two years ago. Where we had ascended a steep snowslope by the side of the séracs was this year a wall of dirty ice, down which stones shot constantly.'

'On July 6 I made a most interesting excursion to the glacier in the valley W. of Styr Digor, in the Uruch valley. On the 7th I went up to the first icefall of the Karagam Glacier. Splendid! Much photographing. The people there remembered the route of the Anglicans.' [This was clever of them, as, so far as we know, none of them saw us attack the icefall! It may refer, however, to our previous passage of the Gurdzievesk Pass and descent of a steep snow-wall (see 'C. Caucasus,' pp. 250, 251).—D. W. F.] 'From Zadelesk I descended the gorge of the Uruch, which appeared to me superior to all others I know in the Caucasus (see "C. Caucasus," p. 428).'

REVIEWS AND NOTICES.

Der Erschliessung der Gebirge, von den ältesten Zeiten bis auf Saussure. Nach Vorlesungen an der K. Berg-Akademie zu Freiberg i. S. für Geographen, Kulturhistoriker und Militärs, dargestellt von Dr. Bernhard Schwarz. (8s.)

In turning from Herr Peyer's work, noticed in a recent number, to Dr. Schwarz's volume we rise from a local viewpoint, an Albis or Uetliberg, to a panoramic peak—a Monte Rosa or an Oerteler. We are lifted from the newspaper to the lecture room; our eyes are carried beyond the limits of Switzerland. The gain may not be without some loss, for nearness of view lends itself to picturesqueness of detail—but the change is welcome.

Dr. Schwarz regards his subject from a scientific standpoint. As mountains, he premises, are part of the earth's surface, so orography is part of geography, a much-neglected part that calls for special treatment. In the conquest of nature the story of vertical advance, as he terms it, is as worth telling as that of lateral extension. He begins with a series of chapters on the various ways in which men, from the earliest times, have come into relations with mountains, and distinguishes, like a true German, three periods in exploration—1, travels from commercial motives; 2, travels from political impulses; 3, travels from pure love of knowledge. The literature of travel he divides further into the (1) childish naïve and uncritical, (2) the scholastic-irrational, and (3) the natural-scientific-rational.

Starting on these lines, Dr. Schwarz gives his readers a graphic and comprehensive sketch, based on very wide research, of the feeling of the ancients towards mountains. He first analyses their dread of them, the real and fictitious terrors with which they invested them. Among the latter were the unwholesomeness of the air, the terrible hunger it caused, the wild beasts, from the ghost of Pilatus and the dragons with heads like cats down to the gigantic carp of Alpine lakes, which were supposed to eat away the foundations of houses and bridges. The dangers and hardships of mountain travel were, on the whole, grossly exaggerated. They formed part of the unknown, and therefore of the terrible. Yet even in early times the double relation between men and mountains was recognised. 'I will lift up mine eyes to the hills, from whence cometh my help,' was an antique sentiment. The mountains were a symbol of rest and eternity, and in this character the Egyptian dead, and the great leader who brought his people out of Egypt, found in mountains an appropriate sepulchre. 'To go to the mountains,' Dr. Schwarz tells us, was, in Old German, an euphuism for 'to die.' On the mountains sleep the legendary heroes Wuotan, Siegfried, Barbarossa, Ogier, and King Arthur.

Wood, minerals, pasturage, sport, medicinal springs, healing herbs, these were among the serviceable products or uses which attracted men to the hills before they had learnt to travel for scenery. Baths first brought the Alps into vogue as a summer residence. On the part played by medicine Dr. Schwarz perhaps hardly lays sufficient stress. The early climbers were for the most part herbalists. But we do the author injustice in an attempt to analyse his already highly compressed general chapters. They show various erudition combined with unusual critical power. Dr. Schwarz does not—like too many would-be historians—take every statement found in books of a certain age as equally true. He discriminates sensibly, whether with regard to the legends of lost passes or to the picturesque exaggerations of ancient chroniclers. Like most commentators, he seems to us somewhat to underestimate classical appreciation of mountain scenery. The Vale of Tempe, equally with the marvels of Egypt, was an object in classical grand tours. Lucian's delightful description of Charon's day out with Hermes, spent in a mountain ascent, shows a clear appreciation of the charm of scrambling. Why is it not more often quoted?

The second and more considerable portion of the work is devoted to

special studies of historical episodes connected with mountains. These naturally have to do with mountain travel rather than mountaineering. From Greek history we have accounts of the march of Xenophon and the campaigns of Alexander the Great. From Roman times: Hannibal's passages of the Pyrenees, the Alps, and the Apennines in the Punic war; the systematic subjugation of the Alps; the Romans in the mountains of Spain and France, of Germany and Great Britain, of the Balkan peninsula, and beyond Europe. Dr. Schwarz's field is too wide for there to be no room for additions and some corrections in detail. For instance, while he throws over the Little St. Bernard with commendable vigour as the Pass of Hannibal, he seemingly has never heard of the Col de l'Argentière as a Roman pass, and in this character at least it calls for mention. There is no sufficient ground for asserting that Ammianus Marcellinus describes the Mont Cenis and 'the passes near Monte Viso' as first opened by Cottius. In pointing out how long it was before peaks were separately recognised, he omits to note the classical references to Monte Viso and Arrian's curious allusion to Elbruz. We have not found any notice of Strabo's picturesque description of Caucasian mountaineering, or of the joint fortification of the Dariel by Justinian and Chosroes. There is no comment on Claudian's spirited description of the mountain marches of Stilicho in the Eastern Alps.

The sketch of Byzantine and Saracenic mountain travels is somewhat perfunctory; it includes a notice of Ibn Batuta's ascent of Adam's Peak, in Ceylon. Ascents of Sinai are set forth at considerable length with early visits to Lebanon, and the land journey in 1556 of four Germans from Damascus to Constantinople. More interesting are the details as to the Mongol rulers (Sultan Babur seems to have been a considerable orographer), and the various commercial travellers, culminating in Marco Polo, sent out from Italy into the highlands of Asia. There are curious Elizabethan records of English travellers through the Eastern Caucasus, which have not attracted Dr. Schwarz's notice. Our traders, forced to turn the flank of Turkey, sailed to the White Sea, thence up the Dvina and down the Volga to the Caspian, and so reached Central Asia.

We must leave the story of South American ascents to Mr. Whymper, and return to Europe. We should have been glad of a more complete account of the passages of the Alps of Holy Roman Emperors. When will some competent critic establish or disprove the locally prevalent tradition of Charles the Great's march over the Tonale? Is not Dr. Schwarz rash in assuming that Conrad Gesner's curious mention of the *arx* of a 'noble Englishman' on the spurs of Pilatus points to an early æsthete? Surely our fellow-countryman was rather of the profession of Barabbas, a successful freelance! Other English travellers whose mountain descriptions deserve notice are Tom Coryat and Lassels, the latter of whom called 'the mountain Splug hill enough for any traveller.'

But it is time to conclude. Dr. Schwarz has, it will be seen, put together a very interesting volume. He has not always contrived—probably he has not attempted—to keep mountain travel distinct from

ordinary travel. The binding link of his varied material holds somewhat loosely, and in the desire to be comprehensive he is not unfrequently incomplete. But such a treatment was hardly avoidable in lectures which best fulfil their purpose if they stimulate rather than satisfy the desire for knowledge. If Germany goes on treating mountaineering in this serious spirit, and writing such excellent books on mountain exploration, English explorers will find formidable rivals in the coming struggle for the conquest of the highest mountains of the world.

D. W. F.

Ueber Fels und Firn : die Bezwingung der mächtigsten Hochgipfel der Erde durch den Menschen, nach Berichten aus früherer und späterer Zeit, für junge wie alte Freunde der Berge dargestellt, von Theodor Schwarz. (Leipzig : Paul Froberg, 1884. 6s.)

The purpose of this book cannot be better indicated than by quoting from the preface. After lamenting that so much of the human energy of our age should be expended on war and the preparations for it—a reflection natural from German professors, who see the studies of their best pupils broken in upon by military service—Herr Schwarz (who is a different person from the Dr. Schwarz of the work last noticed) points out that we live in the epoch of another and less costly war, that between men and mountains, the deeds done in which are as deserving of record as those of the battle-field.

‘Many,’ he goes on, ‘set down the assaults on the great mountains as altogether unprofitable; others will, at the most, allow them the rank of muscle and nerve-strengthening gymnastics; it is but few who recognise that in reality we are here in presence of a campaign of a very high degree of importance in the history of the advance of scientific knowledge. Yet it is one of the chief objects of mankind more and more to explore and master the great home they inhabit, our Earth. To this end it is not enough to push on in horizontal progress over land and sea, to cross the deserts of Africa and the ice wastes of the poles; if man’s occupation is to be complete it must include also the loftiest heights of our globe.

‘One hundred years ago hardly a summit of our European Alps had felt the tread of man; now the range of conquered summits extends from Japan to the Rocky Mountains, from the equator to the snowy ridges that look down on the ice-laden fiords of Greenland. Gazing from the crest of this ever-growing and swelling wave of discovery, no thinker, assuredly, will babble with contemptuous shoulder-shrugs of “objectless Alpine sport,” but will rather look forth in a prophetic spirit to the time, however far off, when no foot of ground, whether in the north or the south, in the heights or the depths, shall remain hidden from the human spirit.

‘The first and principal aim of this work is to place before the public the ascents made in different decades and various quarters of the earth in the light of this common aspect.

‘The editor had also another aim at heart. If the deeds of famous warriors are rightly set down for the emulation of the young, at least

with equal right should the men who penetrate on untrodden paths into the heart of the mountains be held up before the eyes of rising generations as examples of courageous spirit and willing self-devotion to a great purpose.

'We are, moreover, persuaded that no more attractive introduction into the domain of Physical Geography (*Erdkunde*), a branch of education daily recognised as of greater importance, can be found than such a collection as is here offered. Finally, we would express a hope that even to the grown-up reader our little volume may come not altogether unseasonably—to those who are themselves in the habit of shaking off in the mountains the cares of life as a remembrance of their own cherished experiences, to those to whom it is forbidden to wander on the free heights at least as some small consolation for the loss of all the grandeur and sublimity from which they have the misfortune to be debarred.'

Herr Schwarz concludes this splendid, not to say highly-pitched, eulogy on mountain explorers by informing his readers that he has been partly guided in his selection by a preference (1) for the first ascents, (2) for German ascents; but that he has not applied either rule rigorously, having subordinated these considerations to a desire to include ascents which had serious importance in the view of physical geography. We proceed, as the best comment on his work, to supply the one point in which it is, strangely enough, deficient—a table of the ascents described, with their dates and the authors' names.

Sinai, Bernard von Breydenbach, 1483; Dr. G. Ebers, 1870. *Elbruz*, Kasbek, Freshfield, 1868. *Ararat*, Parrot, 1834. *Argæus*, H. F. Tozer, 1879. *Demavend*, Brugsch, 1861. *Ibi-Gamin*, Schlagintweit, 1855. *Fusiyama*, Rein, 1874. *Long's Peak*, Miss Bird, 1879. *Popocatepetl*, Von Thielmann, 1876. *Orizaba*, Doignon, 1851; Von Müller, 1856. *Irazu*, Scherzer, 1853. *Cotopaxi*, Reiss, 1873. *Teneriffe*, Löher, 1875. *Cameroons Mountain*, Barth (after Burton), 1861. *Kilimanjaro*, Von der Decken, 1862; New, 1863. *Hekla*, Ida Pfeiffer, 1845. *Guldhöpig*, Passarge, 1880 (*circa*). *Lomnitzerspitze*, Von Fellenberg, 1860. *Königstein* (Transylvania), Filtsch, 1876. *Olympus*, Heuzey, 1860 (*circa*); Barth, 1862. *Parnassus*, Vischer, 1853. *Ætna*, Spallanzani, 1788. *Gran Sasso d'Italia*, Calberla, 1875. *Monte Rotondo*, Gregorovius, 1852. *Mulahaçen*, Willkomm, 1845. *Maladetta*, Vassier, 1870. *Mont Blanc*, De Saussure, 1787. *Mount Cook*, Green, 1882. *An ascent in Greenland*, Payer, 1870.

Herr Schwarz has confined himself to short, almost too short, but generally accurate introductory paragraphs on the history of the mountains referred to. It is obvious that since he wrote mountaineering has been carried further, and that there is already room for additions. Surely Whymper's Chimborazo should have found a place. Herr Schwarz seems not to be aware that Mr. Green and Mr. Tozer have both published books, as well as articles buried in what he humorously calls 'the crevasses (*Spalten*) of the "Alpine Journal."' Mr. Bryce's 'Ararat' might also well have been referred to. In introducing *Ætna*, Hadrian's ascent to see the sun rise, one of the first instances of a

mountain being climbed for pleasure—for the previous ascent of Empedocles can hardly perhaps be looked on in this light—should have been alluded to. But Herr Schwarz has done his work well and thoroughly, and these few suggestions are made in no unfriendly spirit, but for possible use in the later editions of his work which ‘young and old’ will doubtless demand. He has left room, it will be observed, for a companion volume on the Alps, which might be made at least equally interesting.

We trust it will not be long before some British publisher finds courage to give us in our own language two authentic volumes on ‘The Conquest of the Alps’ and ‘The Struggle with Mountains.’ The former should begin with Pilatus (Gesner, 1555), the Buet (De Luc, 1770), Mont Blanc (De Saussure, 1787), and go down to the Aiguilles Dru and du Géant, care being taken to prefer quality to quantity in the ascents given, and to select such as are characteristic of different epochs and diverse individualities—*e.g.* the Early Renaissance (Gesner); the Scholastic Gothic—with a fine taste in dragon gargoyles—(Schenchzer); the Early Scientific (Saussure, De Luc); the Early Alpine Club (Wills, Wetterhorn; Hardy, Piz Bernina; L. Stephen, Schreckhorn); the Scientific-Poetical (Tyndall); the Scientific-Practical (Whymper); the Mountaineer-made-Perfect (Dent, Pilkington). For the last Emerson might supply the motto—

Well I know no mountain can
Stand before the perfect man.

D. W. F.

Russian Central Asia, including Kuldja, Bokhara, Khiva, and Merr. By Henry Lansdell, D.D. (London: Sampson Low & Co., 1885. 24s.)

In these volumes of adventurous travel, pleasantly described, Dr. Lansdell incidentally discloses to the Alpine Clubman a new world to conquer when the Caucasus has become hackneyed. This is the Thian Shan group of mountains, whose northern face he skirted. One of the most frequented trade routes of Central Asia in former times passed through its midst, and is marked in the Catalan Map of 1375, and described by a certain Balducci Pagoletti, who travelled for the Bardi of Florence in 1336. It now occupies the southern part of the Russian province of Semirechinsk—the land of seven streams. It forms, to quote Dr. Lansdell’s words, ‘the watershed of the rivers Syr-daria and Chu, of Lakes Balkhash, Ala-Kul, Ebi-Nor, and Ebigesun-Nor, on the one side, and on the other, the Upper Amu, Lake Lob-Nor, and the river Tarim Gol. Its entire length is about 1,660 miles, and its highest peaks everywhere rise far above the snow-line. The average height of these dominant peaks varies from 16,000 to 18,000 feet, and some of them even exceed 21,000. The entire mass is estimated by Réclus as twenty-five times larger than the Swiss Alps, and as forming a protuberance upon the earth’s surface considerably larger than all the mountains of Europe put together. Reckoning their average width at 250 miles only, the total superficies of this orographic system would cover 400,000 square miles, or as much country as the whole of France and the Iberian peninsula.

‘ In height, the Thian Shan range, as already hinted, may be reckoned among the chief mountains of the globe, and the snow-line is generally at a great altitude. In the northern, or Sungarian Ala-Tau, it is about 10,000 feet above the sea; on the forty-third parallel it generally rises to 11,000 feet; and in the southern groups, about the Zarafshan, to more than 14,000 feet; whilst on the mountains of the Pamir it exceeds 15,000 feet. Almost throughout the dominant range, and in certain of its spurs, there are glaciers, the number of which is computed at not less than 8,000. Especially grand are those found in the principal range, called the Muz-Tag, crossed by the famous Muzart Pass.’

The author travelled from Europe through Western Siberia. A railroad carried him as far as Ekaterineburg, whence he posted to Tiumen, then took steamer to Tobolsk, and so up the Irtisk to Omsk. Thence he posted to Semipalatinsk. From this place his journey lay southward, passing the eastern end of Lake Balkhash until he reached the border of the district above described. Leaving England on June 26, he arrived, after some delays and diversions, in this region about the middle of September.

The future climber in the Thian Shan mountains will evidently have a long and rather laborious journey before him in order to reach his field of action, and will probably find himself not without difficulties after his arrival. On these Dr. Lansdell does not enlighten us, and as he did not penetrate at all into the mountain region, he is unable to give any information as to the important matters of provision and porters. Neither are we told how far the traveller can pass in security, but as some Russian men of science have visited the Thian Shan group, parts, if not the whole, are probably safe. Accounts of their explorations, including the passage of a *new* glacier ‘col’ over the Zarafshan glacier, may be found in the ‘Supplementary Papers’ of our Royal Geographical Society, and in recent numbers of Petermann’s ‘Mittelungen,’ which, under its present editor, pays special attention to Russian explorations. It is evident from Dr. Lansdell’s book that whatever complaints our nation may have to make about the advances of Russia in Central Asia, the result has been to bring a very large tract of the earth’s surface from a state of utter barbarism to one of comparative civilisation.

Dr. Lansdell, after leaving Semirechia, travelled in a south-westerly direction to Bokhara, and thence made his way through Khiva to the eastern shore of the Caspian, whence he returned to England, after an absence of 179 days and a journey of 12,000 miles. In all the last-named district there does not seem to be any field for the mountaineer, and in many parts there seems little to attract any one. Dr. Lansdell’s description of some portions of the Aralo-Caspian area—lands which appear to be suffering from slow desiccation—represents them as dreary in the extreme. The book is pleasantly written, and is a storehouse of valuable information, for the author, in addition to his own observations, has spared no pains to gather material from Russian books, and has thus placed within general reach much valuable information, previously inaccessible, concerning the ethnography, geology, and natural history of a region so much of which, but a few years ago, was almost inaccessible to Europeans.

Spaziergänge in den Alpen: Wanderstudien und Plaudereien. Von J. V. Widmann. (Frauenfeld: J. Huber. 1886.)

We learn from the cover of this book that Herr Widmann has written an epic poem in twelve books, as well as two tragedies. This no doubt accounts for the inflated style and mannerisms of the work now before us, in which the painful straining after smartness has produced on us (and we venture to think will produce on most, if not all, his readers) the exactly contrary effect to that hoped for by the author. When he drops this mantle which hangs very awkwardly about him he can write very pleasantly, and show that he is a better man than he pretends to be. The book is made up of a series of short papers, written every evening at the end of his day's walk, and apparently published in some newspaper. We are taken to the Italian lakes, Davos, the Bernese Oberland, and a certain 'Bad' in Graubünden, the life of which is portrayed not without some shrewdness. More than a third of the book is filled with a very detailed account of the writer's first visit to Chamonix and Cormayeur in August 1885. It will be seen that Herr Widmann deals mainly with subalpine lands; he allows that he has but rarely trodden a glacier, and seems rather excited by crossing the Glacier des Bossons, while a descent down a snow-slope on the Scaletta Pass unfortunately gave him a bad cold. He tells us that he has tried to draw 'genre' pictures of the men and women he came across. Some of them are not unsuccessful, but Herr Widmann quite fails to appreciate the sterling qualities of Alpine peasants, often hidden under rough exteriors. In parts his souvenirs become a chronicle of the smallest of small beer; petty incidents are so beaten out that one really wonders if he was only trying to see how many lines he could fill. We prefer those parts of his narrative which deal with the queer little baths and secluded, unknown valleys which lie between Bern and Château d'Oex. The author is there in his element and does not think it necessary to have the usual flings at climbers and guides which disfigure his Oberland and Chamonix pictures. Want of mountain experience may be pleaded for not unfrequent slips, but the following description of the view from the Col de Balme is too characteristic to be lost: 'Gemmi, Jungfrau, Finsteraarhorn, Grimsel, and Furka lift themselves up and are easily recognised'!

Herr Widmann loudly proclaims himself a Freethinker, and we cannot, therefore, be surprised at his singular intolerance of things which do not approve themselves to his particular crotchets. Religion, especially Christianity, is spoken of in the most offensive terms, the only commendation being reserved for a very enlightened Jew whom he met and who observed the ceremonial precepts of his law while avowing his disbelief in their efficacy. Next to religion English travellers are his pet abhorrence, and he only melts in one case when some English people spoke kindly to the little dog which is his constant companion on his rambles. We are glad to sympathise with Herr Widmann in his dislike to hymn-singing in hôtel salons when accompanied by a poor player on the piano, but once more we must part company with him when he deliberately states his preference of the

scenery between Bourg S. Pierre and Orsières to that of the St. Bernard itself, and his enthusiastic description of the Rhone valley seen when looking back from the gorge of the Dala on the way to Leukerbad betrays want of experience.

When we next meet Herr Widmann we hope that he will have given up his present artificial and stilted style, and that more extended experience will have shown him that beautiful as are the lower slopes of the Alps, the great snow and rock giants will still better repay the extra trouble and fatigue involved in making their personal acquaintance and in exploring their fastnesses.

In den Hochalpen: Erlebnisse aus den Jahren 1859-1885. Von Paul Güssfeldt. Second edition. (Berlin: 1886. 8 francs.)

In this excellently printed and well got up volume of 350 pages Dr. Güssfeldt has collected a number of articles describing the climbs he has made in the Alps during his mountaineering career. With a few exceptions they were all originally published in the 'Jahrbuch' of the Swiss Club, and are now reprinted without substantial change. We notice, however, with pleasure that Dr. Güssfeldt has revised his accounts of his ascents of the Piz Roseg and Monte della Diagrazia, and now acknowledges that the former peak was first ascended by Messrs. A. W. Moore and H. Walker in 1865, and that the latter was *not* first ascended in 1866 by Jenni and Fleuri, thereby admitting the ascent of Messrs. E. S. Kennedy and L. Stephen in 1862. Probably the author's curious theory that narratives of alpine ascents should be as 'subjective' as possible, and that the climber should roam about 'without heeding his predecessors or followers,' was the source of the original mistakes; this theory, however, has still left traces of its presence in several of the papers contained in the volume.

Dr. Güssfeldt gives an interesting sketch of the way in which he was first led to climb a high mountain. It was during his stay on the shores of the Lake of Geneva in 1859 that some acquaintance of his made a wager that the Dent du Midi was inaccessible; our author won the wager by making the ascent, and henceforward a passionate desire to make ascents of loftier peaks possessed his soul. In 1860 he climbed the Gross Glockner, and in 1861 the Tödi. He purposely avoided reading any books on alpine travel, though he drank in the tales of the guides; his wish was to make expeditions without any amateur companions and to learn the secrets of the mountains by his own personal experience alone.

The Matterhorn accident of 1865 caused him to hasten to Zermatt, filled with the desire of repeating the ascent of that peak. The Taugwalders were unwilling to repeat the climb by the Zermatt face, but on September 18, 1865, with our author, started from Breil, to attempt the peak on that side. So far as we know, this attempt has hitherto remained unknown to alpine historians. It was unsuccessful, indeed, and the party regained Breil 22 hours after leaving it; but at 3 P.M. they had attained a height which Dr. Güssfeldt estimates at 500 mètres below the summit, and were turned back only by the smooth

and polished rock faces which rose above them. It was not till 1868 that Dr. Güssfeldt was able to avenge his defeat, and succeeded in crossing the mountain from Zermatt to Breil. This ascent seems to have been the forerunner of the many difficult expeditions which have given to our author a high place on the roll of alpine explorers.

The climbs described in this volume were, with a few exceptions, made either in the Bernina district or in the ranges round Zermatt.

The Disgrazia, the Piz Roseg, the Fuorcla da Roseg, Monte Scerscen and its *Schneehaube*, Piz Kesch, Piz Morteratsch, are successively described, and their conquest narrated in very vivid language, which expresses the powerful impressions made by these wanderings on Dr. Güssfeldt's imagination. His chief love, however, is the passage of the Bernina Scharte, which he accomplished for the first time in 1878, and repeated in 1884, the object in the latter case being to meet certain criticisms of his original account by Dr. Schulz, who made the 'course' in 1883. In 1884 Dr. Güssfeldt took but forty minutes from the 'Scharte' to the summit of the Pizzo Bianco, and his account is illustrated by two pictures reproduced by Obernetter's new process from the author's photographs, both very successful and striking. The view of Pizzo Bianco from the Tschierva glacier seems, however, a little hard and wooden. It is curious that the Bernina Scharte does not yet seem to have attracted the attention of English climbers, who yet mourn so much over the lack of alpine novelties. Among the Zermatt peaks the ascent of which is described are most of the familiar names: Monte Rosa, from the Lysjoch, Breithorn, from the north, Dent Blanche, Matterhorn (in 1879), Col du Lion (a thrilling tale of adventure and peril), and Dom. The illustration of the Matterhorn from the Zmutt side is not successful, as the peak is strangely dwarfed and flattened down.

The Oberland is represented only by a description of the descent from the Jungfrau to the Wengern Alp, the most exciting episode being the passage of an ice couloir under the Schneehorn, during which the party were for a whole hour exposed to the greatest danger from the overhanging séracs, which, luckily, did not give way at that particular time. The only paper which deals with mountains outside the boundaries of Switzerland is that which describes Dr. Güssfeldt's 1881 campaign in Dauphiné. Both he and his guide, Burgener, were strangers to the district, and seem to have been almost entirely ignorant of its alpine history. On several expeditions they had a local guide. On their passage of a new col at the S.E. foot of the Ecrins leading from the Glacier Noir to the upper plateau of the Glacier Blanc, and on the ascent of the Ecrins by the E. ridge, they were much tormented by mist and storm. This only can explain why Dr. Güssfeldt still claims to have made the ascent of the Ecrins from the Glacier Noir, though he really took one of the old lines of ascent up the final peak, the base of which he had reached by a new way. No doubt our author, on a second visit to the spot, would readily acknowledge that he did not fully grasp the intricate topography of the south face of the Ecrins, and that those best acquainted with Dauphiné are not doing him injustice when they utterly decline to admit his claim to have ascended the

Ecrins from the Glacier Noir—a feat not yet accomplished, and perhaps beyond the powers of man.

An interesting paper on alpine climbing closes a volume the perusal of which we can cordially recommend to our readers. It does not relate the exploration of any unknown mountain district, but deals with peaks and passes familiar, by name at least, to all; nor is it the work of one of the pioneers of our noble craft—rather of one of the second generation. Still, it is one of the most important alpine works published of late years, and it is always convenient to have in a collected form the papers of a climber so well known in the alpine world as Dr. Güssfeldt. It is particularly important as a memorial of the long connection between the author and his faithful guide, old Hans Grass of Pontresina, which marked an important stage in the thorough exploration of the Bernina group.

Die Gefahren des Bergsteigens, von H. Baumgartner, 61 pp. (Zürich: Published by the Swiss Alpine Club. 1886.)

This unpretending little work is, as a brief introduction informs us, a prize essay. We quite share the view of the Central Committee of the Swiss Alpine Club that there was room for a concise and practical work on the subject; for, though all the rules that should govern mountaineering have by this time been laid down distinctly enough, it would be difficult to point to any one published work in which the mountaineer may find set forth the simple rules that should guide him. Originality is not demanded in a work such as this; a well-selected compilation is all that is wanted. The real dangers of the Alps should be clearly indicated; the imaginary dangers should be mentioned and estimated at their actual importance. Finally, the rules that should guide the mountaineer in avoiding or minimising the real dangers should be plainly laid down. For such a book there was room. For such a book we must confess, after reading this work, that there is still room. It is a fault in the author that he goes into infinite detail, considering the brevity of his work, on subjects which are not more directly connected with mountaineering than any other form of athletic pursuit. So many pages are occupied with medical details that the pamphlet irresistibly recalls the 'ambulance' books which a few years ago were so fashionable. At the very outset the reader is solemnly warned against mountaineering if he is the subject of fatty degeneration of the heart, or is liable to stomach complaints, and so forth. All this might have been summed up in a single sentence to the effect that if the intending mountaineer suffers, or suspects that he suffers, from any organic or serious disease, he had better consult a medical man before he plans his tour. It should not be the province of a work on the dangers of mountaineering to pour forth at length counsel which is at once amateurish and grandmotherly. A formidable list of complaints liable to assail the mountaineer is given at the end of the work, including loss of appetite (!), internal hæmorrhage, broken legs and arms, and so forth. Rules to be observed in the matters of eating and drinking in the high mountains occupy an undue number of pages. Many are practical enough, and there are sound hints on clothing and

so forth and on matters of 'training.' The advice given on p. 22 is beyond criticism, to the effect that the mountaineer after a day's work should take a cup of camomile tea and a tepid foot-bath. The latter injunction appears especially sound as far as it goes. Not much more than one-third of the book is really devoted (from p. 23 to p. 49) to the subject that ought to have occupied the foremost place. For the most part reference is made to well-known alpine accidents, and the proper moral is drawn from each individual calamity. But this is hardly enough. Rather broader generalisations would have carried much more weight. It is so easy to see where the fault lay after the accident has happened; it is so easy to see what ought not to have been done; but it is so hard to make many who go on the mountains realise what ought not to have been tried.

On the most practical and important point of all—the use and handling of the rope—the author's remarks are insufficient. He fails also to insist on the many advantages of the iceaxe over the alpenstock on all sorts of ground.

We have no wish to be unduly severe on this work, but it becomes necessary to point out the chief shortcomings of a book which has received the *imprimatur* of the Swiss Alpine Club, and for which that Club assumes the responsibility in virtue of publishing it. The work smells a little too much of the study; and the practical mountaineer—in which class we doubt not Herr Baumgartner should be placed—has too little prominence. There is still room, as we have said, for a good and short work on the subject. All the rules are known and published; a judicious editor to arrange them in a handy form is alone wanted.

Twenty-seven years ago, in the first volume of 'Peaks, Passes, and Glaciers,' Mr. John Ball published his remarks on 'The Mode of Travelling in the High Alps.' The advice given was sound and clearly put. But the mode of travelling has developed since Mr. Ball wrote, and some of his statements are obsolete now. The preface to Murray's 'Switzerland' contains some remarks by a well-known alpine writer on the subject well up to date, and which appear to us to leave little to be desired. But, unfortunately, people do not often read prefaces. C. D.

Paterson's Guide to Switzerland, with Maps and Plans. Second edition.
(London: Stanford, 1886. 1s.)

A shilling guide to Switzerland! It is characteristic of the modern type of tourist that he should grudge a greater expenditure on his guide-book; but he could hardly hope for a better shillingsworth than is here offered. The booklet is of course a guide for highways rather than byeways, and the editor deliberately declines as a rule to pass the snow-level, on the very insufficient ground that where guides are required a guidebook is superfluous. The Lucmanier is barely mentioned; Evolena, Zinal, Arolla are not even in the index. But within his limits he has done his work carefully, clearly, and intelligently, bringing to the test considerable personal knowledge and a large power of assimilation. For example, the 'historical sketch' reminds us of that in the 1879 edition of Murray even to the reproduction of an identical quotation. Possibly

we should read the rather ambiguous statement in the preface that the 'tourist will find all the necessary information that the larger and more expensive guide books afford' as an acknowledgment of the editor's indebtedness to his predecessors?

If the omissions in this guide are serious the sins of commission are remarkably few, for we will not count as such the printer's errors which have escaped a first revision. The worst thing we have come on is the string of historical and scientific statements that follows.

'The changes in this (Lower Grindelwald) glacier have been very remarkable. Three hundred years ago an easy path led through its present bed into the Valais beyond. In the seventeenth century the glacier increased enormously, and, rushing down into the Grindelwald valley, carried away many dwellings and the Church of St. Petronella, &c.' On the *rushing* glacier we need hardly comment. The very slender historical basis these exaggerations rest on is set out in Mr. Longman's papers in vol. viii. of this Journal.

Here is a sentence which needs to be reversed to correspond with nature: 'The scenery of the Lake of Lecco, though pretty, cannot vie in beauty or grandeur with that of the Lake of Como.' Again, 'beautiful grounds' are exactly what the 'Grand Hôtel de Locarno' has not. 'Centre for most beautiful excursions' would be more to the point. The new hotel on Monte Mottarone is not mentioned; and the editor shows a certain innocence in quoting Mr. Augustus Hare on mountain views. That eminent copyist can, it is well known, hardly mention a mountain without a mistake, and that Mont Blanc 'stands out against the crimson sky at Varese' is one of his numerous elementary misconceptions! The following suggestion is crude and obsolete: 'To avoid sunburn use glycerine and salad oil.' Cold cream in small zinc bottles is less nasty and more efficacious.

Such slips are, however, the exception. On the whole we can cordially recommend the guide to those for whom it is intended. It is written throughout in an intelligent and educated style, which contrasts pleasantly with that of another cheap handbook still on the market. Practical details as to conveyances, distances and fares, have been worked out, apparently with minute care, except as to new railroads. The production of the volume (type, paper, &c.) has been carefully attended to. The maps are scanty and poor; but the plans of towns are numerous, exceptionally clear, and up to date.

RECENT ALPINE ACCIDENTS.

FATAL ACCIDENT ON THE CORNETTES DE BISE.—On May 22 a most melancholy accident occurred on the Cornettes de Bise to a youth of eighteen, Mr. Charles K. Puckle. He with a friend named Ormsby, son of the chaplain at Clarens, made the ascent of the mountain during the night, arrived safely at the top, and then took what they thought a short cut on the way back. They arrived at a place where there seemed no use but some danger in going on, and stopped a moment on a grassy ledge to consult. Suddenly the ground gave way under Puckle's

feet. He made a spring for what he thought a solid rock, which, however, was a loose boulder and gave way with him, both rolling down the slope upon another great stone, which Puckle struck with his head. He then bounded down the slopes and little cliffs in company with the two large stones, fell over a precipice, and finally stopped on an avalanche track 800 feet below the point whence he fell.

Mr. Ormsby appears to have followed his friend by almost the same track, but he does not know how he got down, except that he seemed to be always jumping or falling. When he reached his companion he found him terribly injured, but still breathing, though unconscious. He remained by him for nearly three hours, chafing his hands and looking out for assistance, till, half frozen from sitting in the snow, he left the spot to try and find help. He fortunately met two men within a short distance, and they carried the dying boy to the chalet of Bise. On the way Mr. Puckle died, having never been conscious since his fall.

The catastrophe caused a most painful sensation at Clarens, where the victim was a general favourite, and much sympathy was felt for his relations.

FATAL ACCIDENT ON THE GROSS GLOCKNER.—How impossible it has been to rely on the paragraphs in English newspapers relating to this terrible accident may be inferred from the following extracts:—‘They started from Kals . . . intending to cross from the Klein Glockner to the higher mountain by the most difficult way over a fish-backed glacier’ (‘Times’). ‘The ascent of the Gross Glockner is, under the most favourable circumstances, a stiff piece of mountaineering. From Lienz the ascent is not very difficult’ (‘St. James’s Gazette’). Lienz occupies to the Gross Glockner the position Martigny does to Mont Blanc. The Gross Glockner is accessible by four routes, none of them offering any difficulty or danger under ordinary circumstances to fair mountaineers.* One of the climbers who have perished—the Marquis Pallavicini—sought out in 1876 another and more impracticable line of ascent, which has never been repeated. ‘This ascent,’ writes Herr Hess in his ‘Hohen Tauern Führer,’ ‘leads directly from the Pasterze Glacier to the highest peak without touching the Klein Glockner. It is one of the most difficult in the Eastern Alps.’

The following details are taken from the press:—On June 25 the Marquis Alfred de Pallavicini and Mons. H. A. Crommelin, secretary of the Dutch Legation at Vienna, both experienced mountaineers, left Kals with two of the best Tyrolese guides—C. Ranggetiner and E. Robesoier—to ascend the Gross Glockner. None of the party returned, and after a protracted search their bodies were found on the upper slopes of the Pasterze Glacier. The distance at which the body of the Marquis de Pallavicini lay from those of his companions and other circumstances led to the melancholy conclusion that he had survived the fall and perished subsequently from exhaustion consequent on loss of blood.

According to Herr Meurer’s account—received at the last moment—the climbers fell from the ridge of the Glocknerwand at a point more

* See *Alpine Journal*, vol. vi. p. 150.

than an hour below the summit, while engaged on a reconnoitring expedition on June 26, owing to the giving way of a snow cornice, on which they had all ventured unawares at the same moment. Their intention was on a subsequent day to ascend the Gross Glockner by a partly new route over the Glocknerwand, Unter Glocknerscharte, and Teufelshorn-Glocknerhorn. Herr Meurer is of opinion that the guides ought to have noticed the indications of a cornice on the ridge.

ACCIDENT ON THE JUNGFRAU.—The following account is taken from the 'Times' of July 23:—

'On Tuesday, July 18, Herr F. Burckhardt, member of the Basel section of the Swiss Alpine Club, accompanied by the guides Fritz Teutschmann and Johann Jossi, both from Grindelwald, made an attempt to ascend the Jungfrau from the side of the Little Scheideck. After leaving the Guggi cabin the party mounted the glacier of the same name. The usual precautions were, of course, taken—that is to say, the three men were roped together, Herr Burckhardt in the middle, one of the guides before, the other behind him. When the climbers reached the séracs, at a point marked on the Siegfried Karte as being at an elevation of 2,700 mètres, an enormous piece of ice broke off from the upper part of the glacier, and came thundering down. Although by good fortune the mass of the avalanche did not sweep across the path of the three men, they were struck by several large blocks of ice and sent flying. Jossi, who was leading, went head first into a crevasse of unfathomable depth, dragging after him Herr Burckhardt, who, however, contrived to hold on to the edge of the crevasse, but in such a position that he could not budge, and was unable to help either himself or Jossi. Their lives at that moment depended absolutely on the staunchness of Teutschmann, who alone had succeeded in keeping his feet. It was beyond his power to do more; impossible by his own unaided strength to haul up the two men who hung by the rope. If he had given way a single step all three would have been precipitated to the bottom of the crevasse. So there he stood, with feet and ice-axe firmly planted, holding on for dear life, conscious that the end was a mere question of time, and a very short time; his strength was rapidly waning, and then? It would have been easy for the two to escape by sacrificing the third. One slash of Burckhardt's knife would have freed both Teutschmann and himself. But no such dastardly idea occurred to either of them. They were resolved to live or die together. Half an hour passed; they had almost abandoned hope, and Teutschmann's forces were well-nigh spent, when help came just in time to save them. The same morning another party, consisting of two German tourists and the two guides Peter Schlegel and Rudolph Kaufmann, had started from the Little Scheideck for the Jungfrau, and coming on traces of Burckhardt's party followed them up, and arrived before it was too late on the scene of the accident. Without wasting a moment Schlegel went down into the crevasse and fastened Jossi to another rope, so that those above were enabled to draw him up and release Burckhardt and Teutschmann. Jossi, although bruised and exhausted, was able to walk as far as the Scheideck, and all reached Grindelwald in safety.'

The ascent of the Jungfrau from this side has been generally acknowledged by the English climbers who have made it to involve a serious risk from falling ice, and for this reason has not been recommended to mountaineers. This account, following immediately upon the publication of Dr. Güssfeldt's narrative (see p. 50), must impress most forcibly on all engaged in alpine travel the fact that no amount of experience can avail against falling missiles, and that the best skill of the true mountaineer is shown in keeping out of their way.

PROCEEDINGS OF THE CLUB.

A GENERAL MEETING of the Club was held in the Club Rooms on May 4, 1886. F. C. GROVE, Esq. (President) in the chair.

In accordance with the notice previously given, the Hon. Sec. proposed, and Mr. DENT seconded on behalf of the Committee, an alteration in Rule III. providing that 'the Hon. Librarian for the time being should be eligible as an extra member of Committee, thus raising the number of extra members from four to five.' After a short discussion the motion was carried *nem. con.*

Mr. YELD then read his paper on 'Some New Expeditions in the Grand Paradis District,' at the conclusion of which remarks were made by Mr. BAKER, who had accompanied Mr. Yeld, and by the President. After Mr. YELD had replied, the President proposed a vote of thanks for the paper, which was unanimously accorded.

A GENERAL MEETING of the Club was held in the Club Rooms on June 1. F. C. GROVE, Esq. (President) in the chair.

The PRESIDENT read a letter from Herr Meurer, of Vienna, thanking members of the Club for his reception at the meeting on April 6.

A discussion arose on the subject of the Candidates' book, in which Mr. KING suggested that if it were proposed to make the entries in the book retrospective or historical only, it would meet his views, though neither he nor Mr. Holzmann considered that the decision to keep the book locked up was in accordance with the rule.

Mr. CLAUDE WILSON then read his paper on 'Mountaineering in Norway,' at the conclusion of which an interesting discussion took place, in which Mr. Cecil Slingsby, Mr. Beaumont, Mr. J. Bryce, and Mr. Russell Starr took part. The President then proposed a vote of thanks to Mr. Wilson, which was unanimously accorded. Mr. WILSON briefly replied, and the proceedings terminated.

The SUMMER DINNER took place on Wednesday, June 16, at Gravesend. Forty-eight members and their friends were present, of whom about forty availed themselves of the special steamer.

THE
ALPINE JOURNAL.

NOVEMBER 1886.

(No. 94.).

THE STORY OF THE PIC D'OLAN.

By A. CUST.

THE lamented approaching decease of fresh Alpine excursions and the fact that no detailed account of a mountain once esteemed 'the peak of the Dauphiné Alps'* has appeared in this Journal may excuse an attempt to galvanise into interest a story commencing ten years ago.

In 1875 Mr. R. Pendlebury was kind enough to allow me to share his Dauphiné trip. We had with us the two brothers Spechtenhauser, creations, so to speak, of a master hand which had transformed them from Tyrolese locals into exceptional first-rates (such at least was Gabriel, the elder brother).

If Alpine travellers as a rule look back affectionately on sleeping-places where in dreams the morrow's laurels have been already plucked, I do not love La Lavey.† To have slept thrice on the same errand in the same dreary huts, grunted

* So Mr. Coolidge informed me: 'in the old books and maps it is always spoken of as about 4,000 mètres.' Its real height is 3,573 mètres, and it is therefore higher than any other peak west of the Rouies; for the height of 3,883, attributed on the map to the Aiguille d'Olan, is a misprint for 3,383, as was pointed out by Messrs. Gardiner and Coolidge independently (from the Rouies) in 1873, and ascertained on their joint ascent of the peak in 1880 (*Alpine Journal*, vol. x. p. 90). It may fairly be called 'the great peak of the district outside of the central range,' for (save the Plat above S. Christophe) it is the highest of the peaks round the Vénéon valley which are not accessible from La Bélarde direct. Both the Rouies and Les Bans are only climbed from La Bélarde, and the Combe de la Muande is the eastmost of the lateral gorges of the Vénéon. Besides, 'great' only implies finest and grandest, not necessarily highest.'

† La Lavey has now a hut, 'small, but well arranged' (*Alpine Journal*, vol. xi. p. 412).

at by the same pigs, tended by the same not over interesting herdsmen, turned out from the same hayloft to repeat the same disappointment, is enough to disincline me to halt there with my pen. Starting thence on July 6, 1875, at 3.43 A.M., we tackled that uninviting middle ground between cow-run and glacier that defies the artist and plagues the climber. Topping the Glacier des Sellettes, we scrambled on to the ridge that parts it from Val Jouffrey (9.15). The Spechtenhausers scanned the steep rock arête that thereto descends from our mountain and shook their heads—'Too much snow.' Pendlebury, however, whose design had been to cross the mountain to La Chapelle en Val Godemar, had in his head the alternative laurels of two passes a combination of which would bring us to that place. We were on the top of one; the other we were to reach in some roundabout way. We descended a wild and rugged steep which seemed to me at least one continued *mauvais pas*; the others, whose spirits rose with difficulties, did not seem to mind it even when we found ourselves *coupés* below. When at last, rounding a corner to the right, we discovered an outlet, Pendlebury complacently pointed out to me a breakneck gully down which the guides would have taken us.*

We were now in Val Jouffrey, whose downward but desolate slant was the obvious course; but, according to Pendlebury, it was the worst direction for our purpose that we could take; and he enticed my unwilling feet to the top of a ridge on the other side of the Pic d'Olan, which mountain during our descent into the valley had presented a remarkably fine appearance. From this second pass, the Col de Turbat by name, we descended by the Combe du Clot to La Chapelle, where 'we were very well received, and we shall never forget the kindness not only of the worthy landlord, but also of the curé and everyone in the village.' †

En route my companions had spotted a 'doable' side of the Pic d'Olan, the rocks here being free from snow, and the following day we retrudged up the ravine to a shepherd's hut where we were to pass the night, ‡ the object being, if

* On my next visit I found that, as had been then suspected, the true Col d'Olan had been parted from us by a ridge to the north, and that it was quite easy.

† Mr. Pendlebury's account in the *Annuaire de la Société des Touristes du Dauphiné*, 1875.

‡ 'Les bergers . . . étaient de très-joyeux gaillards, et nous passâmes avec eux une très-agréable soirée.' Mr. Gardiner (*Alpine*

possible, to effect a descent from the summit to the Glacier des Sellettes, thus reversing the previously contemplated course.

'Seen from the neighbourhood of the cabane,' writes Mr. Pendlebury, 'the Pic d'Olan presents a fine, precipitous summit, sending out two spurs, one to the east, the other to the Col de Turbat; in the middle is a small glacier or snow-field, above which the rocks rise to the summit of the mountain in frightful-looking precipices. Between the two spurs the rocks are divided by a kind of depression or couloir which it seems possible to scale for a certain distance without much difficulty. Unfortunately the couloir is closed at the summit by perpendicular rocks, and I even believe that it is equally interrupted by a precipice above the little glacier above mentioned. Our plan then was to scale the rocks a little to our right of the couloir until we could enter the couloir itself, and then ascend this as far as possible. How to reach the principal arête, or what difficulties we might meet with in following the arête to the summit, it was, needless to say, impossible to divine.'

After a struggle with 'frightful rolling stones,' during which 'nothing could cheer our spirits,' we crossed the little glacier and took to the rocks, on whose facility the guides began jokingly to congratulate us; 'we never know what rocks are like until we are among them.' We breakfasted (at my request, Pendlebury's stomach not requiring these additions), put on the rope, and no more jokes were made.

'After some 60 or 70 mètres the character of the rocks changed entirely, and a kind of buttress formed a sort of barrier between us and the couloir. I had often before admired the marvellous agility of Gaber on rocks, but the manner in which he made the ascent of these heights (finding for his feet or hands places almost imperceptible to our less practised eyes) only increased, if possible, the admiration with which he inspired us.

'The couloir was extremely steep and shut in above by impracticable rocks, and we cast anxious looks around to search some means of exit. To add to our perplexities the clouds, which had been threatening all the morning, commenced to settle on the mountain.

'Possibly we did not take the easiest route after leaving the couloir; certainly we could not have hit on a ~~more~~

Journal, vol. ix. p. 231) found these 'bergers de Provence' 'infinitely superior to the aborigines physically, intellectually, and socially.'

difficult way. We turned to the left, the rocks on the right appearing impossible to climb, and succeeded in gaining the principal ridge of the mountain by a climb exceeding in difficulty any on the south side of the Matterhorn. At one spot in particular, immediately before reaching the arête, to which the guides gave the name of "Die böse Stelle (La Mauvaise Halte)," we had to climb an almost perpendicular rock about 18 mètres in height, which formed one side of a little ravine.'

A minimum of halt being allowed, we pursued our uncomfortable track along the main ridge, which did not rise much, with the unknown prospect in front obscured by mists; 'the clouds became thicker and thicker, and a terrible north wind struck us and froze us to the marrow.' We were pulled up by a wall. Like baffled hounds the Spechtenhausers (always as keen as their master, and now filled with a growing anxiety about the aspect of the weather), saw themselves thus robbed of a prey the more eagerly chased that 'der Almer' had been heard of but one day behind in Val Jouvrey, and they naturally preferred that it should fall to their ice-axe than to his. The cliff was not 50 feet in height, but apparently impracticable. They disappeared, and then summoning Pendlebury to their counsels proposed to him the solution which Nature has adopted from the beginning, the survival of the fittest. Nature, as a rule, is not beneficent to the less fit, and it was by a freak of compensation that in this instance she balanced the discomforts of a narrow, windy gap, similarly situated as to precipices and mist on either side, with gladdening nectar of the provision bag. There had been no time to think, but the guides' proposal that they should proceed with Pendlebury alone only just enabled us to save the summit, and, as will presently appear, our own heads into the bargain. The peak proved to be not above the cliff, as they expected, but the ridge extending far back into the mist, the party went on till they reached a point whence all the ridges fell down into space. The cheerfulness of their voices on their return was in keeping with their success, and that all was going smoothly with the invisible climbers (the passage was on the east side of and behind the front of the cliff) was shown by the guides' running fire of approving comment on the adroitness of their *Herr*, whose graphic description I must once more beg leave to take up.

'At last the arête contracted, and we saw before us first a deep depression, and then what appeared to be a very

pointed and formidable-looking aiguille. We descended into the opening, not without trouble, but on our arrival below it seemed that all advance was impossible. The opening on which we were was a very narrow saddle of snow, on either side of which the ground fell away with terrible rapidity. Right in front of us the rocks rose vertically to a height of about 10 mètres, forming a kind of wedge, of which one side—that on the right—was almost vertical, while the other was a smooth and unbroken slab of rock. Poor Gaber was in despair; the summit was close and yet apparently inaccessible. But Joseph had no intention of being beaten. After some time he suggested that, if Mr. Cust would remain on the saddle, he, Gaber, and I could succeed in reaching the summit. . . . We commenced the dangerous passage of the rocks on the right, traversing them almost horizontally as far as a point where a kind of ravine gave us some hope of being able to regain the arête. The work was excessively difficult. The rock, as I have already said, was almost vertical, and the only possible foothold was what a little ledge of rock gave us here and there, and which was just large enough to hold the edge of the boot. But with care in moving we succeeded in gaining the little ravine, and ascending the main ridge for some time arrived at the summit without other difficulty.

‘There was little to see. The clouds had become more and more threatening. All that we could perceive at intervals when they lifted a little was that we were certainly upon the highest point. The cold was intense and snow began to fall. If we wished to return safe and sound there was no time to lose; accordingly in about five minutes we retraced our steps. The descent required the greatest caution, but was not so bad as might have been expected.

‘From the saddle we returned with all possible haste by the route we had followed in the ascent of the mountain. The weather was frightful; the hail, thunder, and lightning rendered our position very precarious. During our descent of the “Böse Stelle” the lightning struck the neighbouring rocks and hurled down enormous masses into the misty abyss. I could not imagine how Joseph, who was last, contrived to descend the bad bit, and I had no time to enquire. We came down as quickly as possible; the rocks, which on the way up had been in a sufficiently bad state, had become twice as difficult on account of the snow and hail with which they were covered. Gaber led marvelously; although all was covered with a thick mist he did

not make a single mistake; and Joseph, who had the no less responsible part in the rear, displayed an astonishing skill; he was, however, rather excited, and cried incessantly, "Nur hinunter! schnell hinunter, sonst trifft uns ein Unglück!"

We quitted the couloir just at the point where we had entered it, though it was impossible to know how Gaber could discover it in the mist and storm which blinded us. In the descent of the buttress of which I have already spoken the storm reached its height. The rest of us had arrived in safety, and we had passed the worst difficulties; Joseph remained clinging to the rocks at some distance above us, when a hail-storm fell on us of which I have never experienced the like elsewhere: the rocks positively streamed with cataracts of falling snow and little avalanches. Joseph was quite incapable of moving and we equally unable to assist him. Only the voice of Gaber made itself heard, saying, 'Ach, Bruder, lieber Bruder, halt nur fest!' The worst of the storm passed in the meantime; with care and, as he confessed, with nerves a little shaken, Joseph, with the aid of Gaber, was able to descend to us.*

It is plain that we were only just in time in getting off the rocks before this waterfall of hail had frozen on them. Incidents like this may well make the more reflecting even among the stoutest of us ask the question how far we are justified in allowing brave and noble peasants to risk their lives by pushing an ascent in threatening weather. It is true that self-indulgence has been declared by authority to be the moral code of the Club, but all laws must admit of a certain elasticity in application. Some of us may remember without regret occasions when we have turned back. There is another unwritten and very English law in the Club which says, Push on and win; and doubtless a past storm is not unpleasant in retrospect, though it is less so when it has been our fault than when it has been Nature's. But with Nature for a foe it is doubly *va victis*; a study of her laws produces both confidence and respect, and the science of mountaineering, in a special limited department of this study, is a signal instance of 'man's power to conquer Nature by obeying her.'

* Our times were: start 3.10, foot of rocks 6-6.17, top of main ridge 10.15, left do. about 12.30 (we had been descending some $\frac{3}{4}$ hr. when I noted the time; it was then 1.15), small glacier 6, La Chapelle about 8.30.

We were received at the village with the 'perfect ovation' of the penny-a-liners, and if Pendlebury was worshipped I was recipient of a secondary homage, which for once in my life made me realise the feelings of the great. We were pounced on by the whole family, and our soaked garments exchanged for others whose variety suggested a general ransacking of the village. I was never so well dressed in the Alps! 'Everyone in the village seemed disposed to do his best to procure us all the necessary comfort; I have very many agreeable souvenirs of Dauphiné, but I shall always preserve that of the Val Godemar as one of the most agreeable of all.'*

Chagrin is a potent motive power; it set me brooding on revenge, and year after year I sought an opportunity to revisit Dauphiné for the purpose of finishing the ascent from the Glacier des Sellettes, which I had looked at with Pendlebury, and which apart from the snow had not impressed me as presenting much difficulty. At last the year came (1880), and with it the ominous meeting in Dauphiné of the two great chasseurs Coolidge and Gardiner. Informed, however, of my design, they most good-naturedly left me my affair of honour with the Pic d'Olan.

The first thing I was told in Dauphiné was that the redoubted Englishmen had done the Olan. From themselves I learnt that it was the *Aiguille* d'Olan, at the other side of the Glacier des Sellettes, whence they had scanned my route, which they told me I should find very formidable. Finding Gaspard disengaged, I chartered him and his son, and set off (August 2, 1880) at his suggestion for a preliminary canter up a 'new peak,' the Tête du Salude, south of S. Christophe, on the ridge between the Tête de Loranoure and the Pic Signalé, which he had managed, poor man, to save in his native hills from the omnivorous claws of Almer. Gaspard had seldom been with Englishmen, and he was very much

* It was a relief to me when the following year, on meeting Mr. Coolidge and Almer at Zermatt, I found that in their attempt of that summer they had been stopped at the identical spot where I paused. This, however, was in weather like ours; the following year they returned in good weather, and reached not only Pendlebury's summit, but the higher one beyond the chasm, of which Pendlebury had no suspicion. Mr. Coolidge, on striking the mountain, took a route nearer the arête than ours, avoiding the couloir and gaining the arête at a lower point. I may add that it is one of the feats of Messrs. Gardiner and C. and L. Pilkington to have scaled a peak which gave so much trouble to some of the best guides in the Alps. (See Appendix C.)

on his good behaviour, which when it occurs is of a superior kind. The company of a clever, independent chasseur, the cock of the walk of the country-side, is not to be despised. He carved the chicken at our first meal and handed me the choicest part with the air of one who knew that he was doing the thing well.

Emerging from the lower slopes of the Vallon de la Mariande, we got on to a patch of snow at an angle of 15° , and here fraternity and equality were over and business was to begin: the business was the trial of the paces and temper of a new-comer. Crossing this patch I made one of those slips with one foot which on safe ground one is apt to make for the sake apparently of rectifying it with the other. Gaspard junior from behind gave a cry, and while Gaspard senior turned round with a startled and wrathful exclamation seized me by the seat of the trousers. From that moment a profound melancholy possessed me. Some initial awkwardness on my part on the rocks probably increased their suspicion that they had to do with an unmitigated duffer, and I found their sole idea of my advance to be a straight haul by the herculean arms of Gaspard senior, with tight pressure of the stomach against the rocks to prevent any evil effects that might occur from the free use of my limbs, while Gaspard junior lifted and steered as before by the latest patch in my nether garments. In endeavouring to account for this mode of progress the thoughts must be carried back to our climbing ancestors, who not improbably in their processions used the tail where we use the rope. The curious may find another instance of the survival of the custom in the case of hôtel cooks seeking in autumn a warmer clime, and let down by their coat tails by laughing guides on the steeps of some snow-covered Monte Moro. My too impatient stomach (an old offender) gave the finishing touch to melancholy and demerits. Over a second meal of which it was the unlucky cause I heard them discuss in their patois the results of the trial. It would be better not to do the Olan; I should be taken ill on the mountain, and then —— would come, mentioning the name of one of their accustomed patrons, whom I concluded they intended 'running.' It is fair to say that on the Olan the wheelbarrow style of mountaineering was not adopted.

We wound round more than one summit before Gaspard came to his 'new peak,' and, as subsequently appeared, wound ourselves off the ridge of the Salude altogether, and on to the Lorancoure, whose highest point lay in front of us at

the other side of a deep and very remarkable chasm effectually interrupting the ridge.*

I was now in that sulky frame of mind which not even the autocrat of all the S. Christophians could withstand, and we found ourselves at La Lavey on the following night. Nothing in the Alps gives greater despondency than turning out of a ch[^]âlet on a doubtful morning. At an h[^]otel you have a choice, a bed to tempt you to stay or console your return; here it is turn out for better, for worse. At La Lavey it was once more for worse. We came in sight of our mountain to discover matters past hope; we returned that weary way down and up the ravine parting the mouth of our vallon from S. Christophe, across which one longs to fly, and entered the h[^]otel in a soaking rain.

Fresh snow fell. Gaspard gave up the Olan and gave out that he was engaged by a certain day to a large non-climbing party. Next day the weather brightened, and I ascended with Gaspard junior to take Gaspard senior by storm as he was peacefully tilling so much of his ancestral inheritance as the subdivision laws had left to his spade. A yell brought him halfway down, spade and all, and nearly as sulky as myself. He urged on me the highly dangerous state of the mountain from the fresh snow, but seeing I was determined said he would send his son to meet the large and otiose party, to whom a day of his absence could make little difference, and agreed creditably to take C. Roderon, whom I afterwards heard he was said not to view with favour.

* Mr. Coolidge has pretty well succeeded in demolishing the separate existence of our summit, which is allowed to form the highest point between the Loranoure (3,299 m[^]tres) and the Pic Signal[^] (3,263 m[^]tres). According to Gaspard, as mentioned by Mr. Coolidge, the name T[^]te du Salude is properly applied to it, having been wrongly transferred on the map to a considerably lower and wholly distinct point on the ridge much farther north, which is that reached in 1879 by M. Vincent (T[^]te des Liches of Gaspard). It lies, however, so close to the Loranoure that my first impression was that the latter, being clearly higher, was the summit of which we were in quest. Mr. Coolidge, who in 1881 repeated the ascent, mounting direct from the great chasm to the north, concludes that 'it is really the lowest of three pinnacles of the Loranoure,' which, 'when seen from different directions, are almost as confusing as the three summits of the Pic d'Olan were to the early explorers of Dauphin[^]' (see discussion, *Alpine Journal*, vol. x. pp. 95, 491), and which in all views form an inseparable group (like those of the three Meijes or three Aiguilles d'Arve) quite distinct from all neighbouring peaks. The point is but slightly lower than the east peak of the Loranoure (3,299 m.) or the Pic Signal[^] (3,263 m.)

The same afternoon we trudged back across the obnoxious ravine to La Lavey. The herdsmen viewed us askance, but, having exhausted all the conversation in so many visits, said nothing beyond a single question. I rose on a fine morning (August 5) with 'Will it go?' printed on my sleepy mind. Much fresh snow would be fatal to my hopes, and our summit would not be in sight until we reached the glacier. We started too soon (2.30), and had to wait for daylight midway. On viewing the mountain we saw that fate was propitious, and there was no snow to speak of. Beyond the glacier we halted again to melt, as Gaspard said, the little snow there was—not where we sat, but on the Olan. Gaspard, however, this time meant winning if he could.

Before the ridge could be reached, the ice-masses that obstructed the entrance to a gully had to fall before Gaspard's stalwart arm. The rocks 'went,' and with one exception we adhered to the arête, where Gaspard, with his only fault of judgment, to avoid an apparent tower essayed, against my wishes, to circumvent it by traversing the dangerous slide of the mountain-face. I confess to having as little liking for these hard, even surfaces, where the agile chamois hunter can save his own body but not those of his companions should they unluckily require from Nature what she has not bestowed on the spot—foot- or hand-hold—as Professor Tyndall for that of the Matterhorn,* and am glad to leave them for my betters.

We turned back, to my relief; the 'gendarme' had been firing with blank cartridges, and passing him with much satisfaction we found ourselves with only a 'staircase' to the top. 'It is ours,' said Gaspard, and began for the first time to forget his science and pull the rope, meaning 'Duffer astern.' In a few minutes we were on the summit. 'Well, are you satisfied now?' said the sturdy peasant, grasping me by the hand.

We little thought that the eye of a converted sceptic had been on us. By one of those coincidences in which nobody in his senses believes in a novel, but in which the order of things seems peculiarly to delight, Mr. Coolidge, happening to have just arrived on a neighbouring summit,† and happening just then to be regarding the Pic d'Olan for the first time, caught sight of three figures in the act of overcoming

* 'Hours of Exercise in the Alps,' p. 289.

† Pic Signalé, 3,263 m. (*Alpine Journal*, vol. x. p. 93).

the last rocks! 'Had I not seen you do it myself,' he wrote some years afterwards, 'I should have remained a sceptic as to its practicability.' He again wrote later, 'It certainly looks very frightful;' and a no smaller authority—Mr. Gardiner—wrote, 'I tell you frankly I did not think you would have been able to get up; it looked as formidable as need be from the Aiguille d'Olan,' which raises two points worth some attention. First, can any relation be deduced from recorded opportunities of comparison between observations by competent persons and subsequent experience of mountains, which may be of use to future explorers? Second, are first climbers' impressions as little trustworthy as an autobiography? They are sure to have a motive for either detraction or exaggeration: the first shows them clever fellows to think so little of it, the last still cleverer to have surmounted such insuperable obstacles. One or the other line must be taken; as a recent writer says of San Francisco, travellers describing that place are bound to show that they have had their money's worth. Repeaters of the expedition readily get their money's worth out of the middle ground by criticising the original account. Accordingly, how does the matter look in retrospect? I think that first impressions are not wholly to be trusted; success, good weather, perhaps one's own accidentally good trim, the state of one's stomach (I speak for myself), anyhow the exceptional skill of a consummate rock climber as guide in chief (estimates, I suppose, being mainly formed by the difficulties encountered by the *guides*), all may tend to an underestimate. On the other hand, by way of a positive element in the present case, I adhere to the judgment formed at the time that no part was so stiff as I will not say the last *mauvais pas* on the other side, but as any of those below it on our route. I have one more positive test, viz. that there was none of that straight hauling with which I for one am wont to associate real difficulty.*

'What is that?' said Gaspard on arriving at the top, forgetful of the laborious description I had given him in bad French. 'The other summit,' said I. 'Which is the higher?' Gaspard laid himself down and eyed it. 'Ours beyond doubt,' said he. I likewise settled my eye on a level with the topmost rocks and sketched. This sketch I retain

* As seen from Val Jouffrey I estimated the slope of the arête at 55°. The ascent should only be attempted when the season is sufficiently advanced to clear the rocks of snow.

as conclusive evidence on the vexed question of the precedence of the two points, further discussed in Appendix B. It was one of those choice days which are the climber's reward, and in the delights of which an ignorant public so little believes. The descent went capitally, taking about the same time as the ascent of the rocks.*

Gaspard's inactive party did not prevent his going down with me to Le Désert to do on the following day another new peak which he had managed to save from foreign aggression, and which by this time I sincerely hope he has bagged. We had been in luck on the Olan, as the guides returned to S. Christophe in steady rain, I—the worse off of the two—remaining at a spot which concentrates on itself all that Ruskin has written of mountain gloom. The only amusing episode in the day was my disputing tough bacon with a cat, which one moment was blinking at me at the far end of a very long room, the next, when I chanced to look out of the window, was dragging my sole viand from the dish in front of me—and the unabashed thief seemed inclined to stick to it! Next day fortune smiled; I got a coloured sketch of my 'bag,' and found my solitary way back across the col, racing the dusk down to La Lavey, and thence in the dark of a moonless night—my usual sketching fate—to S. Christophe, where I received the friendly congratulations of my present editor.

Gaspard, hitherto, I believe, undescribed in English, is one of those characters that calls for more than the ordinary passing notice of a guide. Of his rock climbing it is enough to point to the Meije; and I need only say that besides being a rock expert he was possessed (I speak of the day after the trial trip) of the qualities of a first-rate guide in handling the rope and giving his traveller his mouth. On snow I had only trial of him on easy ground, and his experience has, I believe, been too limited to acquire the necessary practice; but I agree with the remark of M. Nérot † (from whom most

* Times: foot of ridge above glacier, 8.40; top of ridge, 9.35; summit, 12.13–2.5; foot of rocks, 5.15 (halt of 20 minutes during descent).

† I was fortunate in coming across M. Nérot at a solitary sketching bivouac in the Vallon des Etançons. He was for the Meije, but deterred by a thunder storm which kept us both there two nights. I am glad to take this opportunity of expressing my gratitude to a foreign member of our Club for the courtesy and hospitality with which he entertained me from the contents of his luxurious store. The hut, which was then a wind funnel and shower bath combined, has been

of this information is derived), that had he, when younger, been 'taken up' by an experienced mountaineer, and shown the round of other Alpine districts than his own, he would have made a guide only to be mentioned on a par with the pick of the profession.* He was, however, more than a professional; I deemed him one of those strong characters, mentally and physically, which nature seems, as appears in Mr. Baillie Grohman's 'Tyrol,' so easily to build up by selection from the materials furnished by a hardy and independent mountain peasantry, whose rude virtues and rough vices foster the growth of individuality. As to the effect of sport, 'the chamois hunter in the course of years, having to face continued perils, to bear hunger and thirst, to encounter snow, ice, and storms, and wait with immovable calm the moment of striking his prey, becomes reserved and taciturn, but full of alacrity in the undertakings to which he may turn himself; a model of frugality, neither bewailing nor fearing the misfortunes of life.'† The head chamois hunter of a whole district is in a position with which we have no comparison in modern England; it is an innocent, popular reproduction of the pre-eminence and freedom of baronial times. The glaciers and rocks of half a canton are his; his valley, if it narrows, shelters his development by independence of the levelling opinion and rivalry of lowland civilisation.

I was told that he had been spoilt by some of his employers, who treated him on terms of equality at hôtels, &c., which may help to account for the story that at a mountain lunch with an English climber, who took him to task for familiarity, he was within an ace of pitching the latter over the rocks; 'and I was near doing it' he said afterwards in describing his fortunate resistance to temptation. I saw no trace of undue familiarity, but he was prepossessed by the discovery that I 'had been with Pendlebury'—a name which M. Nérot spent his wet days in Dauphiné in teaching him to pronounce. His pride in his great strength took the form

replaced by a 'large and comfortable' one at the Châtelleret rock (*Alpine Journal*, vol. xi. p. 412).

* I mean that he had not the education usually gained by promising men as porters or second guides to good guides. Mr. Coolidge informs me that Gaspard's first climb with a traveller was with him in 1876 up the Plat; he came then as the local chamois hunter, but was not a guide till after his Meije ascent in 1877. He made his way by being the only man in the district who had any enterprise.

† Lavizzari; *Escursioni nel Cantone Ticino*, p. 390.

of saying that he would give any other man the advantage of laying him flat on the floor. A less amiable quality is a phenomenal, and, as I have lately heard, in one instance unworthy, jealousy of rival mountaineers, whether professional or amateur. Some pride, however, may be allowed to a native who, as he said, step by step and one piece one day, another another, won his way up the Meije; and to my ears there was a certain dignity—not, perhaps, without a savour of the ‘magnanimous man’—in the following estimate of his own powers: ‘Almer is a good guide, a very good guide; but all that Almer can do I will engage to do myself—I will not say more.’ Those who reflect on the accumulated science in the most difficult part of the mountaineer’s art, ice-craft, denoted by the name Almer will derive an amusement from the last remark, which it is hoped they will lay to the credit of the almost despondent efforts which the author of this paper has made to find, if not a new joke, at least a ‘new route’ to a joke.

APPENDICES.

A.—SUMMITS OF THE OLAN.

Mr. Coolidge reminds me that he as well as Messrs. Gardiner and Pilkington always speak of the *three* peaks of the Olan, but quotes from M. Guillemin (p. 62): ‘Une heure encore nous fut nécessaire pour arriver au point culminant de l’arête sud, auquel on a donné à tort le nom de cime méridionale, mais qui est un ressaut insignifiant de l’arête elle-même: nous ne reconnaitrons à l’Olan que les deux grands sommets sud et nord; le premier est la cime Pendlebury et le deuxième la cime Coolidge.’

The latter view—viz. that there are only two peaks, ‘north’ and ‘south’—is that taken by Pendlebury and myself. C. Pilkington says, ‘We have nearly *all* spoken of three peaks, but the first and most southerly ought not to be so called; it is not much more than a shoulder. Had it not been called one before we were up, I, for one, would not have called it a peak.’

The Olan is constructed of two ridges meeting at right angles: of these the most important runs east to the Col des Sellettes and Cime du Vallon, being part of the southern wall of the snow region of Dauphiné, which here makes an outward bend. Of this ridge the north summit is the termination, and thus the south-west apex, of the bend. The other ridge, which contains the second summit, is a secondary ridge turning round at the Col de Turbat to flank Val Jouffrey, and forms the southern end of the low ridge connecting the Pic d’Olan with the Aiguille of the name, which sinks to the level of the Glacier des Sellettes in the Col d’Olan. The mountain thus

presents two very different faces, of which by far the most picturesque is turned to Val Jouffrey; the aspect within the walls must be very different from either. South of the second summit an abrupt shoulder (the so-called third summit) is formed by a bend of the now rapidly falling ridge to the south-west, which is balanced by a flying buttress in the other direction parting the two streams of Clot and Combe Froide (across this the Pas d'Olan is passed). The shoulder thus breaking down in a cliff between two ridges, gains an imposing façade as seen from the Clot ravine, appearing to be the whole mountain, so that first explorers might easily suppose they had in view the reverse side of the ridge impending over the Glacier des Sellettes. Lastly, a smaller buttress is thrown off on the same side above the Col de Turbat, parting the head of the Combe du Clot and cooping in the little glacier of which mention is made above.

B.—RELATIVE HEIGHT OF THE SUMMITS.

Messrs. Guillemin and Salvador de Quatrefages incline to the opinion that the south summit (Pendlebury's*) is the highest.† Mr. Coolidge states that when seen from all other points the north summit seems the higher, and that from the latter the entire range of Mont Blanc is seen, which it entirely conceals from the south summit.‡ Messrs. Pilkingtons and Gardiner state that the north summit seemed to them about six feet higher than the south summit, on which they stood. My sketch from the north summit, showing the subalpine ranges to the south-west clear above the south summit, seems to me conclusive in favour of the north peak. I estimated the difference at the time at probably 15 or 20 feet.

The south summit lies 239° (= S.W.) from the north summit. Two mountain ridges are seen over the top, which I have no means of identifying, except that they seem to belong to a range between Gap and Die. One of the more marked summits (the highest apparent one lies more to the west in the direction of S. Firmin) rises nearly over the highest point to about one-third the height of the cairn, and, as indicated on a rough map, its distance will be some 19 miles. To this must be added the difference due to inferiority of height and the rotundity of the earth. A prismatic compass gave, at a distance of some 3.8 miles in Val Jouffrey, a rough difference of 1° ($134\frac{1}{2}^{\circ}$ — $135\frac{1}{2}^{\circ}$) between the two peaks, denoting a distance apart of 117 yards. C. Pilkington, to whom I submitted the above note, writes, 'North peak certainly higher, say by 10 feet.'

The north summit is a level ridge running 312° ; the highest point of each summit lies near the east end. La Chapelle is seen (about 195°) from it, and therefore conversely the north summit is visible from La Chapelle, appearing as a comparatively low point.

* Also called the Central peak.

† *C. A. F.*, 1879, p. 62: 'Nous croyons qu'elle [N. peak] est un peu moins haute, car elle ne limite pas l'horizon et les montagnes surgissent derrière elle.'

‡ *Alpine Journal*, vol. viii. p. 331; cf. *C. A. F.*, 1877, p. 270.

C.—NOTES ON THE ASCENT OF THE OLAN WITHOUT GUIDES BY MESSRS. GARDINER AND C. AND L. PILKINGTON.

Mr. C. Pilkington informs me that after climbing and crossing slantwise to the left over rocks they hit the left-hand corner of the so-called couloir (more a narrow icefield and almost too broad for a couloir, which, however, is perhaps the best name) at bottom, crossed it obliquely, and took to a small narrow couloir which led on to the rocks of the shoulder. The latter presently became an arête and then a lump once more, this lump being the so-called south summit.* There was no difficulty so far, except the rocks traversed below the couloir. There was a view for five minutes on the top, then thick mist, and they never saw anything again till they reached the snow below the lowest rocks. Snow fell while they were on the top, and filled all the hand-holes on the bad bit. They had no difficulty in finding their way down in spite of mist and snow.

Mr. Gardiner says † that though perfectly fine during the ascent, on the summit 'une violente tempête' broke on them. 'Nous fîmes la descente avec un vent violent et une aveuglante tempête de neige. Dans un des plus mauvais passages une avalanche de pierres se produisit : l'une d'elles m'atteignit à la tête et me fit une coupure assez profonde.'

Mr. Gardiner endeavours to account for the similarity of weather which his party and ours encountered by the suggestion that the mountain by its exposed position on the south-west frontier of the Alps would be more rapidly reached than other mountains by bad weather. He instances in comparison the weather and position of the Bietschhorn.

D.—LIST OF ASCENTS OR ATTEMPTED ASCENTS OF THE PIC D'OLAN.

July, 6, 1875. Messrs. R. Pendlebury and A. Cust, with the two Spechtenhausers, inspected the arête from the ridge near its base, but were deterred by the amount of snow.

July 8. Mr. Pendlebury, starting from the Combe Froide, reached the south summit, ‡ Mr. Cust remaining at a point below the summit. Weather unfavourable. Time: nearly 7 hrs. from hut to final ridge; about 3½ hrs. on rocks; descent from final ridge to foot of rocks 5½ hrs. (*Alpine Journal*, vol. vii. p. 316; *S. T. D.*, 1875, pp. 105–110.)

June 30, 1876. Mr. Coolidge with the Almers, starting from the Combe Froide, reached the point below the south peak, where Mr. Cust, as above stated, remained. Weather very unfavourable. (*C. A. F.*, 1877, p. 265; *Alpine Journal*, vol. viii. p. 331.)

June 29, 1877. The same party, repeating the ascent, reached the

* It would seem that the party hit off a route intermediate between Pendlebury's (the highest) and Coolidge's (the lowest), the latter reaching the arête by climbing the rocks directly from the little glacier without entering the 'couloir.'

† *Annuaire de la S. T. D.*, 1879, p. 98.

‡ Also called the Central peak.

south summit in 5½ hrs., and thence the north summit in 55 min. (*C. A. F.*, 1877, pp. 268-270; *Alpine Journal*, vol. viii. p. 331.)

July 26, 1877. The Val Godemar guides—Philomen Vincent, Louis Armand, and Pierre Galland—reached the south summit. (*C. A. F.*, 1879, p. 65; *S. T. D.*, 1877, p. 69.)

July 17, 1879. Messrs. Gardiner and C. and L. Pilkington, without guides, reached the south summit in 3½ hrs.' actual walking from the glacier. A severe snow storm prevented their proceeding farther. (*S. T. D.*, 1879, p. 98; *Alpine Journal*, vol. ix. pp. 361-2, 412.)

August 25, 1879. Messrs. Guillemin and Salvador de Quatrefages, with Emile Pic and Philomen Vincent, of Navettes, reached the south summit. (*C. A. F.*, 1879, pp. 61-2.) 'Le temps nous manquait pour aller visiter la cime Coolidge.'

August 8, 1880. Mr. Cust climbed the north summit from Glacier des Sellettes. (*Alpine Journal*, vol. x. p. 95, and the above paper.)

August 30, 1880. Mons. C. Verne, with Vincent and Armand, starting from La Chapelle at 7.20 A.M., reached the south summit at 4.20 P.M.; in falling snow and high wind returned to Combe Froide hut in night. (*S. T. D.*, 1880, pp. 134-5.)

August 11, 1885. MM. G. Leser and P. Engelbach attempted the ascent, but were driven back by a storm after reaching the small glacier at the south-west foot of the peak. (*S. T. D.*, 1885, p. 88.)

THE GREAT SCHEIDECK IN DECEMBER.

BY C. D. CUNNINGHAM.

LAST December I left Florence for Berne by the night-mail. On turning out of my bunk in the sleeping-car next morning at an hour there is no need to mention, found myself 'over the hills and far away,' among the snow-capped peaks of the S. Gothard. The evening before I had crossed the Piazza del Duomo, as the last rays of the sun were lighting up the rich coloured marbles of the Campanile. I had seen the soft afterglow behind the olive-covered Bellosguardos, and watched the lights appear one by one from the Trinità to San Miniato. A greater change in one's surroundings could not be imagined. It was a 'transformation scene' in real life. The Geneva Cross had taken the place of the Shield and Crown of Italy. The fur-trimmed cloaks of the country folk on the platforms had disappeared, and we caught sight of the broad-brimmed hats and homespun *fracs* of the Switzers. Presently a station master called out 'Eensteegen!' an unmistakable indication where we were. And we began to experience that most pleasant sensation of feeling that one is coming near home. It is difficult to realise how the absence of tourist life alters the appearance

and changes the whole character of a Swiss town. In Berne there were no 'clubistes' in the Rue Fédérale, with flannel shirts, Norfolk jackets, and hob-nailed boots; no 'vieilles Meess Anglaises'; no Germans of that indescribable type which leads their neighbours at *tables d'hôte* to conclude that they are men of great learning—probably professors in their own country. The Federal Assembly was sitting, and the streets were crowded with councillors, their constituents, and well-to-do country lawyers. The 'Messieurs de Berne,' as the old families are still called, had returned for the 'season,' and were driving about in their well-built Zürich 'traps.' The town was in her normal condition, no longer a mere stopping place for tourists on their way to the mountains, but the capital of one of the most thriving little republics in the world; a difference appreciated by no one more than a hatter in the main street, who had cleared out his stock of wide-a-wakes and pugrees, and put a cocked hat in the centre of his window.

Next morning the early train brought us to Scherzligen, then by boat to Därligen, and a few minutes afterwards we saw Melchior Anderegg waiting outside the barrier at Interlaken station. It took but a few minutes to pack our luggage in Herr Boss's sleigh, but I would not like to say how long it was before we were ready to start. Not until the flaps of our fur caps were tied over our ears, the straw well stuffed round our ankles, and the bear's-skin tucked in, did Melchior give the word 'Fertig!' and the sleigh bells began to jangle.

So much has been written about 'the blue skies and shining peaks' of Switzerland in winter, that from reading these descriptions many people must almost imagine that bad weather is unknown in the Alps from November till February. To-day a cloud hung over the valley, shutting out what little was left of the afternoon's sun. The snow lay deep; a scene more bleak or dreary could not be pictured. In many places the snow had drifted and formed wreaths round the chalets. One saw how admirably constructed the broad eaves and balconies were, not only for protecting the inmates from the heat of summer, but against the winter's storm. On coming near Grindelwald the dull grey sky seemed to impart a leaden colour to the snow. The only colour visible was the pale blue of the ice-fall of the lower glacier, which in summer is the only grimy-looking object to be seen in the whole valley. Presently we turned the sharp corner by the Bär, the S. Bernards gave tongue, the

door was thrown open, and the Boss brothers gave us a right hearty welcome. The cold bleak valley and long sleigh drive only seemed to increase the feeling of warmth and comfort we experienced on entering the lobby, where the gaudily coloured hotel advertisements were hidden by the huge driving-coats and furs. Never before had the brothers' snug little sitting-room looked so cosy as it did that evening after dinner, when we had drawn our chairs round the stove. Twelve months before the same party were seated there, and it almost seemed as if we took up the thread of the conversation at the point where we left off the previous Christmas. The wind was blowing 'great guns' outside, making the shutters rattle and creak. Within all was warmth and blaze and good cheer. What a contrast this was to the stone-floored, ill-lighted rooms in Florence, with their wide doorways, whose tapestry hangings ill succeeded in keeping out the draughts. (But three nights before I sat in a studio of this description with two friends, who had once been at Lucerne in October, discoursing on the dangers of damp beds, chills, and frost bites.) At ten o'clock, by mere force of habit, and in spite of the howling of the wind, Melchior went out to have a look at the weather, and gravely informed us that 'Morgen gehen wir nicht auf die Berge;' an announcement which we tacitly understood to mean that there was time to throw some more logs on the fire and fill another pipe before turning in.

During the last few years much has been written on the difference of the Alps in summer and in winter time. The characteristics of the two seasons can practically be summed up in a couple of sentences. Contrasts of rich colouring, produced by the snow peaks, blue sky, and the many-coloured foreground of dark pines, meadow land, and rock, *versus* the wide expanse of pure snow, the huge icicles on the cliffs, the frozen waterfalls, the leafless stems of the trees encrusted with hoar frost, and the wonderfully clear bracing atmosphere. Nature has a different garb for every season of the year—the fresh young shoots and flowers of spring, the dark reds and golden browns of autumn, or the beautiful forms of snow and ice. To decide which garb best becomes her would indeed be difficult. But the oftener one goes to the upper valleys in winter, the more one notices the entire absence of colouring; the more one feels the monotony of the wide expanse of snow, which never changes till the setting sun throws a rich glow over the landscape; a prospect somewhat marred by the thought of the number of

hours which must elapse between 4.30 and the time for 'turning in.' Even the most prosaic peasant must feel a certain amount of pleasure when he first sees the *perce-neige* appear through the snow, apart from any association the flower may have in his mind with the advent of the tourist. And *à propos* of the tourist: nothing contributes more to the dreariness and desolation of the surroundings of the Swiss inn in winter than the objects which are associated in our minds with the travelling public. A snow-covered 'Ici on marque les bâtons' signboard is not a pleasing object; and no amount of snow and ice can make a pile of green-painted tables and garden-benches look picturesque. If we take the trouble to read between the lines what has been written about the Alps in winter, we shall see how often the purely physical side of enjoyment is brought to the front. The sleighing, the pleasure of taking exercise in an atmosphere so keen and bracing that fatigue is almost an impossibility. Then, again, the novelty of seeing old friends under an entirely new aspect. Were it possible to reverse the seasons, and transform July and August into January and February, I doubt very much if one would see the same faces year after year in the great mountaineering centres. When we think of our favourite peaks and valleys, it is always in their summer garb they come to our imagination.

In a couple of days the weather was fine, and we arranged to walk to the Great Scheideck and back. Four of the Boss brothers went with us, taking their dogs, guns, game-bags, and cartridge-belts. It might have been the morning of 'the Twelfth,' judging from the preparations which were made. On our return Melchior maintained that he had seen the track of a fox; but, apart from this, there were no signs of game of any sort; a fact which has necessitated my altering the title I originally wrote on my first page of manuscript—'A Day's Sport on the Great Scheideck.' Never had the little village looked more picturesque—the *châlets* covered with fresh snow; the great icicles hanging from the eaves, shining like so many crystal pendants. The Eiger was one mass of snow; never had its crest looked grander than it did in its shining covering of snow against the clear winter's sky. Presently we came to the church. Saint Martin's 'Loch' was not filled up with snow and ice, as one might have supposed it would have been, and we saw the tiny speck of blue appearing through the dark cliffs. This Grindelwald S. Martin seems to be of local celebrity; he is certainly

not S. Martin of Tours. Herr Strasser, the Pfarrer, says that he is a patron of all those who travel among the mountains. Should this be the case, it is a curious coincidence that the founders of the Alpine Club established themselves in S. Martin's Place, thus unconsciously associating the Club with the patron of our craft. As we passed the school-house it chanced to be play-hour, and some two score of tiny Switzers were careering down the slope in front on their toboggans, and then pulling them up to the top again for a fresh start. One might go far before seeing such a cheery, pleasant sight as this rosy-cheeked crowd—the little lads in their fur caps and homespun jackets, and the lassies in their bright-coloured kerchiefs, outward and visible signs of much thrift and comfort at home. Not even in Canada has the sport of tobogganing been carried to greater perfection than in Switzerland. In the Engadine regular 'runs' are prepared every season, when most of the hazards are by degrees christened with appropriate names, such as Fenwick's Leap, Shuttlecock Corner, &c.—names which generally allude to the casualties which take place at these particular points on the 'run;' for it is by no means unheard of at S. Moritz to find invalids in the month of July who are unable to leave from the effects of injuries they have sustained while tobogganing in winter. The course the 'runs' take is decided by the *habitués* of the place, who have doubtless good reasons for not making them perfectly safe, at all events without dangerous hazards. The church 'run' at S. Moritz is three-quarters of a mile, and in racing time has been done in about one minute thirty-one seconds. There would seem to be as great a difference in the going powers of toboggans as there is between a number of skiffs or canoes, to judge, at least, from the conversation one hears every evening in that corridor of the Kulm Hotel known as 'the Omnibus.' The toboggans used by the Engadine visitors are much more firmly constructed than those in the Oberland. The runners are often coated with steel, and they are fitted with cushions, somewhat in the shape of a saddle, which give the 'rider' a firmer seat than he would have on strips of wood. One important improvement has been introduced by the Englishmen in the Engadine, which until recent years was unknown even in Canada—two short sticks, not unlike drumsticks, which the 'rider' holds in each hand, and by which he regulates the pace, and steers by pressing them on the ground to the right or left. In Canada, where thick gloves are generally worn, this is done by the hand; the

Oberlander uses his feet, which he always keeps close to the front of the runners.

But to return to Grindelwald. We did not follow the mule-path; when the fields are covered with snow one is allowed to make straight across country. Since leaving the village we had been walking along one of those hard beaten tracks or slides, made by the great logs which are constantly brought down from the forests on the lower heights. Several logs are tied together and put upon a small sleigh; the guide sits in front and acts as brakesman and steersman. Much skill and strength are required to guide these great loads of timber down the steep, hard-frozen slides, as in nine cases out of ten a slip means a broken arm or leg to the guide. A good idea of the weight of these loads may be formed from the fact that a couple of horses are often harnessed to the sleigh when it reaches the valley. After seeing the guides at their winter work, continually performing such *tours de force*, one has less admiration for the powers of the people who carry up Gladstone bags and bundles of rugs to the inns on the Faulhorn or Little Scheideck. Those accustomed to watch the guide at work in winter time look upon what he does in summer as comparatively child's play. We are too apt to forget how much all this hard toil and exposure help to develop the guide's strength, and give him a knowledge of the ever varying state of the snow. That it is the 'Herr who makes the guide' is no doubt a pleasing reflection, but it is only true from a 'geographical' point of view, so far as giving the guide opportunities he would not otherwise have for becoming acquainted with the great mountain highways of his district. In December the guide is in better training than he is in August. The unwonted fare of *foie gras*, tinned apricots, cup, and all such factitious aids to lessen the fatigue of going up snow-slopes, are not considered by the guide to be such certain specifics for 'climbing made easy,' as by the Herren who adopt this form of dietary. We soon reached a flat piece of the track, where three well-known guides were unloading the sleighs they had just brought down from the Scheideck. Their rough homespun jackets and fur caps suited them better than the quasi Sunday costumes in which they disport themselves before the Bär or the Monte Rosa, though the latter may have been turned out in some West-end workroom before being 'made down' by the Poole of Grindelwald. The Christmas before, while staying at Grindelwald, we were often able to arrange so that at the end of a long day's

excursion the last hours might be done in sleighs. Writing at the time in a contemporary, I said, 'We covered the sleighs with a good thick coating of pine-boughs and then squatted down, holding on to the side of the sleigh with our "outside" hand, and with the other we clutched any part of our neighbour's dress or person which afforded a good hold. One of the guides sat on the front rail of the sleigh, steering it and regulating the pace with his feet. The sensations we experienced as soon as it was well under way, going full spin down a slope of one to one with a sharp turning in sight, can only be appreciated by people who have been in a runaway dogcart. By the time the third turn had been taken we began to "sit down in our saddles" as it were, and after ten minutes we thought that there never was such a delightful way of getting over the ground. One literally seemed to fly through the air. There is as great a difference between this form of sleighing and that of sleighing on the level with the fastest teams ever yoked as there is between a goods train and the Scotch express.

'We had taken four hours to walk from Grindelwald to the point where the sleighs were waiting for us. But returning in the "chemin de fer," as the guides called it, by very much the same route, we took less than thirty minutes to reach the bridge over the Lüttschine. The same week we did the distance between Mürren and Lauterbrunnen in twenty-five minutes, although we went easy most of the way, owing to the number of sharp turnings and the consequent risk of being upset.'

We had a lovely winter's walk; the snow on the track was crisp and firm, and we reached the top of the pass in less time than we would have taken had we been toiling up the dusty mule-path in summer. The Jungfrau was hidden by the Mönch, bringing to one's mind the pretty fable told by the good brothers of the monastery at Interlaken about the monk protecting the Jungfrau from the wicked ogre. I have always wondered what the Protestant version of this tale is. 'And I should like to know what the Schwarz Mönch was about,' said my old tutor one day at Mürren, who never lost an opportunity of exposing the 'errors of Rome,' even when they presented themselves in the apparently harmless guise of what he used to term 'Popish legends.' The sun was shining brightly, there was hardly a breath of wind, and we sat down on some logs piled against the little inn (which was of course closed), while Melchior unpacked his sack and produced a *gourde* of *vin ordinaire* and some bread

and cheese. We could not have had a more perfect view—one of those we occasionally see in the Alps, which one always looks back upon and remembers with pleasure. No attempt at description can convey the least idea of the wonderful beauty of the scene. By mentioning only the *names* of the principal features in the landscape I can best help the reader to conjure up the picture. The great cliffs of the Wetterhorn, the Eiger, the Mönch, the long snow-stretch of the 'Faulhorn side' of the valley; and in the distance the Niesen and the tiny range of hills to the right, standing clearly out against the sky-line. Behind us the wide stretch of snow-covered pine forest; the Titlis beyond. It was all very beautiful. The air was so perfectly clear, there was so much 'atmosphere' in the landscape, that if it had been painted all idea of distance would have been lost. It seemed as if one could almost have thrown a stone between the Röthihorn and the Simelihorn. For more than an hour we stayed on the summit, till Melchior said it was time to return to Grindelwald.

Next morning we drove by sleigh to Interlaken, a great contrast to our drive three days before. The sun was shining brightly; the cliffs were coated over with huge icicles; the pines were covered with fresh snow, as if a white ostrich plume had been laid on every bough. As that old traveller wrote, who landed years and years ago in Ceylon, 'it could not be beheld without much rubbing of the eyes.' Two days later I was once more in my quarters in the Lung' Arno, exactly seven days since I left them; in Florence, one of the most beautiful cities in the world, a city filled with many of the greatest triumphs in stone and on canvas. These seemed only to enhance one's recollection of the grandeur and majesty of the Alps. And even amidst the beautiful surroundings, and artistic life of the place, one would often wish for the quiet peaceful days among the mountains.

THE ALPUJARRAS AND THE SIERRAS NEVADAS.

BY HUGH E. M. STUTFIELD.

ONE fine morning in spring I found myself with a friend on board a steamer of the French line that rejoices in the name of the 'Anonymous Company of Mixed Navigation,' bound from Tangier to Malaga. Having spent the

winter travelling in Morocco,* a run through Andalusia, the ancient stronghold of the Moor, struck us as a not inappropriate wind-up to our wanderings, and we hoped to combine a little mountaineering with our sight-seeing. With this view our intention was to make our way to Motril, a small port some seventy miles up the coast from Malaga, whence, after a short tour in the Alpujarras, the mountainous district lying between the Sierras Nevadas and the Mediterranean, we could ascend some of the peaks of the Sierras by their southern face.

No steamer for Motril being expected at Malaga for some days, and our time being limited, we hired a small felucca, or lateen-rigged boat, and, after stowing our baggage in her to serve as ballast, set sail early on the morning of May 2. A stiff breeze bore us merrily along for some hours, and as we passed we had splendid views of the coast. In the background the crags of the Sierra Tejada (near Alhama) stood out in imposing relief against the sky, their lower slopes clad in places with orange-groves and dotted with numerous white houses. Farther on the mountains descended more precipitously to the water's edge, and bold promontories, crowned here and there with half-ruined towers, jutted out at intervals, enclosing in their arms tiny inlets affording safe anchorage to the fishermen's boats.

At four o'clock the wind died away, and with it all hope of reaching Motril before sundown. I suggested getting out the oars and rowing on to our destination. 'No puede ser' ('Impossible'), the formula that always comes so readily to the lips of a Spaniard, was the boatman's reply. If we landed at night we should be fired upon as smugglers, and perhaps captured and imprisoned. I knew that a young Englishman had actually been shot dead in this way near Malaga not so very long before; so on reflection we thought the game was not worth the candle, and curling ourselves up in our rugs prepared to pass the night in the boat.

At 2 A.M. the boatman roused us and we started again. The surface of the Mediterranean shone smooth and clear as glass in the moonlight, and the measured plash of our oars alone disturbed the prevailing stillness. Dawn broke at length on the ghostly forms of the Sierras Nevadas, which had just come into view, shrouded almost to their base in a mantle of freshly fallen snow, and in another hour

* See 'El Maghreb: 1,200 Miles' Ride through Morocco,' by Hugh Stutfield. Sampson Low & Co.

we glided into the bay of Motril. On beaching the boat a gendarme, armed with a rifle, pounced down upon us and took possession of our baggage, which was deposited in the guard-house. He was followed by a ragged individual wearing a big slouch hat, who represented himself to be the 'sanitary inspector' of Motril, and said he could not possibly permit two strangers to endanger with their presence the health of the town intrusted to his care. Half-a-dollar apiece, however, sufficed to square these two trusty guardians of the public health and order, and we were free to go and spread what plagues we pleased among the confiding inhabitants of Motril.

From Motril a diligence conveyed us through a wild, rugged region to Lanjaron, which was to be our headquarters for the next few days. This charming little place, 'el Paraiso de las Alpujarras,' besides being the best *point d'appui* for excursions in the Alpujarras, is well worth a visit in itself, lying, as it does, in the heart of the mountains amid picturesque crags and orange-groves. There is an extraordinarily African air withal both about the town and its inhabitants, in whose veins the old Berber invaders of Andalusia have left a strong infusion of Moorish blood.

We spent the next morning in getting together our mules and guides and making preparations for an early start the following day. In the afternoon we scrambled up to the old Moorish castle which, perched on a pinnacle of rock inaccessible on every side but one, is the most prominent feature in the foreground of the landscape from the windows of our inn, and made the tour of the mineral springs for which Lanjaron is famous. Eight o'clock the following morning saw us astride our animals *en route* for Orgiba, a village in the picturesque valley of the same name. From Orgiba our course lay along a wild *barranco*, or watercourse, and then up the hills to the left. The character of the scenery struck me as far less stern and forbidding than that on the northern slopes of the Sierras, whose acquaintance I had made the previous year, for though the hillsides were rugged enough the valleys were fertile and pleasing to the eye, and tolerably populous. Lunch and a draught of generous *vino de pasto* at a small *venta*, or roadside inn, raised our spirits as we wound round the shoulder of the hill and descended into the romantic *Barranco de Poqueira*, a deep, richly wooded valley running down in a southerly direction from the Sierras. Several pretty, intensely Spanish-looking villages lay on our route, at the highest of which—Capilleria (5,000 feet)—we

were to pass the night. Our quarters at what Mr. O'Shea in his guide-book calls the 'abominable posada' of the village were not as bad as we had been led to expect. The parlour being on the first floor at least saved one the necessity of fraternising with the pigs, and goats, and sheep, and other live stock which perambulate the rooms in most Spanish inns. The peasants and our muleteers fed with us at the same table after the fashion of the country, which, though monarchical in its form of government, is, as regards the habits and customs of its people, still the most intensely republican in the world.

In the evening the mists, which during the day had obscured the mountains, cleared off and gave us a fine view of the Sierras. The graceful Picacho de Veleta (11,500 feet), the second summit of the range, rose straight in front at the head of the valley. On its right, but with its peak masked by an intervening crest, was the Mula-haçen (11,781 feet), the monarch of European mountains outside the Alps and the desire of our hearts for the morrow. The natives assured us that all the big peaks were impracticable before June, and laughed to scorn my boast that, given fine weather, before mid-day the next morning we should be on the summit of the biggest. The Fates, however, were destined to be against us, and proved the natives to be in the right after all.

At 4.30 A.M. I roused our men with some difficulty, and after a light breakfast we started on our way, having first secured the services of a local guide who was said to know the route. Clouds were gathered thick all round, and the weather altogether boded ill for our success. Two hours from the village we left the mules at a small shanty and started on foot, but we had not gone ten minutes before the guide called a halt and said we must go back, as the ascent was out of the question. I had had some experience the previous year of the timidity of the native mountaineers, when, in an attempt upon the Picacho de Veleta from Granada, a man who was recommended to me as the best local guide struck work an hour below the summit in perfectly fine weather and left me to go the rest of the way alone. I was therefore not disposed to relinquish our undertaking so easily, and after some discussion we announced our intention to the guides of going on without them. 'Estes hombres van a morir' ('These fellows are going to their destruction'), exclaimed the headman in despair at our obduracy, and with further subdued mutterings about 'dos locos Ingleses' ('two English lunatics'), not meant to reach our ears, they left us to

our own devices. An hour's walk brought us to a sort of plateau where the mists rested at an even elevation just below the snow-line. Here we halted a moment to take our bearings with the compass, and then in the faint hope that the weather might change we plunged into the fog, following as near as possible the crest of a ridge which we guessed would lead us to the summit. The snow was fairly hard, and the keen air caused us to walk briskly up the gradual incline, but without seeing twenty yards before our noses. Once only the fog lifted for a few seconds, giving us a glimpse of the huge mountains on every side, but affording no clue as to our whereabouts, and then settled down again denser than ever. We calculated that less than an hour more would bring us to the summit, but the weather showing no signs of improvement, and anything in the shape of a view being out of the question, we decided to turn tail and make our way down as fast as possible. In a couple of hours we emerged from the mist on to the plateau, where, as before, everything was perfectly clear below us, almost the whole extent of the Alpujarras being visible from this point with the Mediterranean beyond. We arrived somewhat tired, and very much out of humour, at the 'abominable posada' soon after five o'clock, in time for a *recherché* dinner of stewed kid, black bread, and garlic.

They had a large musical party in the parlour the same evening, several peasants bringing guitars and *banduras*, on which they played their Malagueñas and other charming Andalusian airs. A dance was likewise set on foot, and we essayed to perform on the 'light fantastic' in our climbing boots, with only moderate success. Our expedition was likewise keenly discussed—chiefly as to how far up the mountain we could have gone. A few of the peasants said we must have been within a short distance of the summit, but the majority refused to believe we had penetrated beyond the snow-line, as an ascent of the Sierras so early in the year seemed to be an unheard-of performance.

Our arrangements for the morrow were to depend entirely on the weather. If fine, we purposed crossing the range of hills at the back of the village to Trevez, another good starting-point for the Mula-haçon, and making thence another attack upon the mountain. At noon, however, the outlook was so bad that we gave it up and made tracks for Lanjaron. Our guide varied the route on the way down by taking us along a tiny path higher up the mountain-side, which wound along the edges of precipices and across deep

rifts and gorges in the most alarming fashion. My mule, who seemed in a great hurry to get home, nearly brought me to grief at one of these places. We were crossing a rocky *barranco*, when suddenly, and after the pig-headed fashion peculiar to his species, he set off at a canter, and the pack turning round under his belly landed me on the ground—luckily on the *inside*, or the result would have been unpleasant. Arriving at length at a small village perched on the hills overlooking Lanjaron, we excited the greatest curiosity among the natives, my knickerbockers in particular being subjected to the closest scrutiny and some not very flattering comments. Our gay Lothario of a guide tried hard to induce a pretty, dark-eyed peasant girl, who turned out to be the niece of the curé, to mount a-pillion on his mule and accompany us to Lanjaron, and nearly succeeded in carrying her off. Her ecclesiastical connection, however, was a fatal bar to the project, so leaving the place amid a shower of good-humoured chaff and banter we made our way down to our quarters just before sunset.

Early on the following morning we booked seats on the diligence for Granada, the tickets conveying the alarming intelligence that the coach-owners would not hold themselves responsible for casualties upon the way resulting from robbery or violence by armed force. The road skirted the western slopes of the Sierras, seamed here as elsewhere by deep rifts and watercourses, then crossed the magnificently green Vega, or plain of Granada, and by three in the afternoon I found myself once more among the groves and fountains of the glorious Alhambra.

Having been thus foiled in our attempt upon the Mula-hagen we lost no time in making preparations for an ascent of the Picacho de Veleta. We determined to dispense with guides, whom I knew to be worse than useless, and to rely on the knowledge I had gained of the mountain in my unsuccessful expedition* the previous year. On that occasion, being unprovided with anything in the shape of an ice-axe, a steep frozen snow-slope had stopped me ten minutes below the summit. Now, therefore, we instructed

* A brief sketch of this trip, which discloses much grand scenery, may be useful. Ride up the Genil Valley (10-12 hrs.) to the marble quarries; sleep in the miners' hut at the head of the valley. A day might be profitably spent here in exploring the magnificent *corral*, where a glacier is said to exist, but this seems to be doubtful. Ride by a narrow path over the mountains to San Geronimo; sleep. Ascend the Picacho (4-5 hours) and return to Granada the same day.

a blacksmith of the town to fashion us implements which should enable us to overcome any obstacle of this sort, and in the result we were armed with a pair of long-handled battle-axes, which created an immense impression upon the natives wherever we went, and no doubt served to confirm the universal belief that all Englishmen are *locos*.

A mule was hired to carry our provisions and what little baggage we required, and early one glorious morning we sallied forth from the town. A laborious climb up some barren, treeless slopes led us to a point right over the valley of the Genil, from which we could watch the windings of the stream in its descent from the Sierras. On the mountains above and around us the scenery was bleak, barren, and almost oppressive in its utter sterility. We were fresh from our long tour in the interior of Marocco, which is wild enough in parts, but neither there nor in any other country have I met with such scenes of desolation as are afforded by the northern slopes of the Sierras. As we proceeded the mountains became grander and more rugged. Bold peaks, of an elevation of perhaps 7,000 or 8,000 feet, rose in front of us, and here and there the hills were cleft by deep *tajos* (chasms) with crags tossed in fantastic forms about their sides. Soon after three o'clock we reached San Geronimo, a solitary farmhouse high up among the mountains, where we purposed spending the night. San Geronimo was once the site of a large monastery, where brethren of the Franciscan order spent their days in fasting and prayer; and certainly to gain absolute seclusion from the world, and to commune alone with God and Nature in some of her grandest forms, a fitter spot could not have been chosen. All view northwards is screened by the Dornajo ridge: immediately to the south lies a deep valley on whose farther side the snowy peaks of the Sierras rise full in view. We had a rather melancholy reception at the farmhouse, the poor woman having lately lost her husband, and being left alone with four children in the midst of this dreary waste. We missed the merry chat and songs which we had been accustomed to in the cottages of the peasantry, and, moreover, had to go to bed on somewhat short commons.

The next morning saw us up betimes, and after despatching our muleteer and his beast back to Granada the two of us started on our way. There was an ominous clearness about the atmosphere, which looked as though our persistent bad luck with the weather meant to stick to us to the end. After two hours' steady climbing we reached the

foot of the Peñon de San Francisco, a dark crag abutting on a spur of the main range. From this point we turned the head of the valley, and striking away to the right made straight for the Picacho. Black clouds were gathered thick upon the Mula-haçen and the rugged cliffs of the Alcazaba, and soon we were caught in a violent snowstorm, accompanied by dense driving mists. The outlook was not cheering, but we were determined not to be baulked this time in spite of the weather, and so pushed on upwards through the fog. My memory, aided by a compass, served me fairly well as to our bearings. Once only was I at fault, but after a few moments' consultation we struck a ridge slightly upon our left, and soon some black rocks looming through the mist told me we were close to the edge of the Corral de Veleta, which intervenes between the Picacho and the Mula-haçen. This *corral* is a huge horseshoe-shaped enclosure, 2,000 feet in depth and some miles wide—like a Pyrenæan cirque on a large scale—round which the principal peaks are grouped. It has one narrow outlet towards the north, and its western face falls sheerly 1,500 feet in one tremendous wall of rock. No other scenery in the Sierras can compare with the *corral* in grandeur. From this point it was impossible to go astray, as we were now almost at the foot of the final slope of frozen snow which had turned me back the previous year. This time, however, the thick covering of freshly fallen snow robbed it of all difficulty, so that we scarcely needed to use our axes. My companion, who, though a better walker than myself, was unused to mountaineering, had rather a narrow escape at this place. He had been keeping a few yards ahead of me, when, happening to look up, to my horror I saw him mounted unconcernedly upon a huge snow *corniche* which hung clean over the abyss! I was relieved on finding he had no immediate intention of committing suicide, as he fancied he was on *terra firma*, but if the mass had given way he would have been precipitated nearly 2,000 feet into the *corral*.

The dim outlines of some jagged rocks above our heads told me we were now nearing the peak, and in three or four minutes we came to a halt at a large cairn built of loose blocks of stone. The mists cleared for a moment, and we found we were at the summit in an angle on the brink of two tremendous cliffs. Aided by the recollection of my last year's ascent I tried to imagine the view, which on a clear day is almost as extensive as any in Europe. North, east, and west the eye roves over a boundless series of alternate

plains and mountains. To the south lie the fertile glens and rugged hills of the Alpujarras, and across the deep blue of the Mediterranean it is said that a person with keen vision (or perhaps better still a lively fancy) can descry the mountains of Algeria. Granada and the red towers of the Alhambra are full in view, and the beauteous Vega seems almost at one's feet. Across the *corral* the dome-like mass of the Mula-haen frowns majestically, as if within a stone's-throw of the spectator, with the precipitous Alcazaba (11,374 feet) close upon its left.

A biting N.E. wind, which froze the breath almost before it left our nostrils, did not invite us to remain long on the top, so we made our way down the snow with all speed. At the Peñon de San Francisco we emerged from the mist, which rested as usual about the snow-line. Instead of returning to San Geronimo, we struck across the Dornajo ridge and descended straight into the gorge of the Genil. Several large patches of snow afforded us splendid *glissades*, so that by four o'clock we struck the path leading to the marble quarries at the head of the ravine. Turning our steps down the valley, we reached the picturesque little hamlet of Guejar, amid orchards and olive-groves, and facing a bold bluff of red sandstone which, surmounted by a ruined castle, rises sheer from the opposite bank of the stream. Our inner man was in urgent need of refreshment by this time, so we lost no time in seeking the principal *posada*, where we found a bevy of country folk seated round the table in the parlour.

The arrival of two bronzed and weather-beaten strangers armed with axes naturally caused some little sensation, but they saluted us courteously enough, and, after the fashion of the country, asked us to join them at their meal. Spanish etiquette requires you to refuse the first time; only if the invitation is repeated are you expected to accept. They next inquired where we had been. 'Up the Picacho,' I replied; at which there was much lifting of eyebrows and shrugging of shoulders, indicative of great surprise; and one fellow, more ill-mannered than the rest, coolly said we were liars. We were much too tired and thirsty to argue the point, but left them to discuss it among themselves, whilst we did the same to two tankards of most excellent white wine. Very 'seductive floods,' as Artemus Ward would say, are these seemingly light liquors of Andalusia—as the thirsty traveller, who, ignorant of their real strength, drinks them in tumblers like lemonade, is apt to find. Anyhow,

we left the village in a much happier frame of mind than when we entered it, and, stepping out briskly down the valley, reached Granada soon after seven o'clock, having been on our legs for nearly fifteen hours.

So ended our trip to the Sierras, which, in spite of the misbehaviour of the clerk of the weather, had been a thoroughly enjoyable one, and I recommend it to all lovers of mountaineering and beautiful scenery. Should these lines induce any of my readers to follow in our footsteps I can only express the hope that they may find the elements more propitious, in which case, if only they will be content with rough fare and a hearty welcome in the cottages of the peasantry, they will not have cause to regret their venture.

MOUNTAINEERING IN ALASKA.

[WE take the following from the 'New York Times' of September 20.]

'Sitka, Alaska: September 10; viâ Nanaimo, British Columbia, September 19.

'The "New York Times" Alaskan expedition was left at Icy Bay on July 17 by the United States steamer "Pinta," Captain Nichols commanding, and began the survey of that bay at once, with preparations for explorations in the St. Elias Alps, on and about Mount St. Elias, which great mountain was afterwards ascended to a height above the snow level greater than was ever made before above that line by alpine climbers.

'Icy Bay is a mere indentation on the Alaskan coast, some 50 to 60 miles west of Yakutat Bay, and would have no existence were it not for an immense glacier emanating from Mount St. Elias and jutting out into the Pacific Ocean far enough to make the western side of the bay. There is no protection to ships in a storm from a southern quarter, and great swells make a formidable surf in the finest weather. Even in this surf, which was quite heavy at the time, the "Times" party and its effects were landed by Lieutenants Emerson and Stewart in a small boat from the "Pinta," at considerable peril to themselves and the crew, and in a most commendable manner. In every way the officers of the "Pinta" showed consideration and kindness to the "Times" expedition, so far as lay in their power to assist them in their undertaking.

'On Monday morning, July 19, the expedition for the exploration of the mountains got under way, the plan then being to have two parties, one camp apart, and to measure the difference between their eight barometrically by one day's simultaneous records for 10 to 12 hours, one half-hour apart. Lieut. Schwatka had the advance party, which left on the morning of the 19th, and Prof. Libbey the other. The course at first lay up the eastern shore of Icy Bay

to where the Indians said a large river came in at the head of the bay, thence up this river to where it came from under the ice of immense glaciers, or as far as the Yakutat Indians ever go when hunting bears, mountain goats, &c., and thence to the base of Mount St. Elias.

'At 8.30 o'clock the party struck a small river, 50 to 75 yards wide, which had to be forded middle-deep in ice water from the glaciers. The next hour's walk was over a beautiful prairie, with heavy grass and wild pea vines, interspersed with strawberry patches, loaded with fruit, and many pretty clumps of evergreen trees. This march brought the party to the great river which empties into the head of Icy Bay, and which was struck about 6 to 8 miles from its mouth. Its immense size was a great surprise, as it was not supposed that such a river existed in that part of Alaska, where it was first struck. The stream is from a mile to a mile and a half wide; 800 to 1,000 yards is water, the remainder being low mud, sand, and gravel. The bay is covered at high water, when the stream must be a second Mississippi in appearance.

'Its western bank is a perpendicular wall of ice, part of the same great glacier which forms the western shore of Icy Bay. It was loaded with glacier mud from the Mount St. Elias Alps, and its swift current, with waves about a foot high, was thought to be 8 or 10 miles an hour. It was surmised at the time, and afterwards partially corroborated, that the great river is entirely too big in every way to be draining only the seaward slopes of the St. Elias Alps in the vicinity of the mountains from which it comes. It must head far beyond the range, and break through them at Repartan Pass, and after draining the Traverse pine districts its muddy waters from the glaciers discolour all the waters of Icy Bay and for many miles out to the sea. It was named Jones River, after George Jones, Esq., of New York City, and geographically was one of the most important discoveries of the expedition. It is not thought to be rivalled by any Alaskan river emptying into the Pacific Ocean.

'Attempting to ascend it along its banks, the party was forced into a wide detour to avoid its many channels, which spread into a vast network of swift waters in the flat lands lying between the St. Elias Alps and the Pacific Ocean, so extended that the river must be 5 to 6 miles wide at its widest part. The march lay across islands and along channels. The party camped the first night on Jones River, at the spot where it debouches between two glaciers. The Yakutat Indian packers now complained considerably of being greatly fatigued, having carried about 75 lbs. each 15 miles over a terrible road for pedestrians. They were sent back next day as a rest and for bringing up another party, instead of advancing farther. Next the barometer was read and the height between the first and second camp determined.

'Next day, July 21, Prof. Libbey's party came up, and it was determined now to advance continually and measure backward barometrically should any success be met with that would warrant it. The constant cloudy state around Mount St. Elias was already sufficient to create strong doubts as to the party being able to ascend it unless the weather became very much better for that purpose. Mosquitoes and

gnats were the great torment everywhere, even on the ice of the wide glaciers, many miles from vegetation of any kind.

'On July 22 the consolidated party advanced over the glacier on the east side of Jones River, that stream running between two distinct glaciers which often bridge the river with ice, making it easy, however, to pass from one side to the other. The day's travel lasted from 6 in the morning until 7.30 in the evening over a terrible road of rough boulders and rocks, or glaciers coupled with mud, or slippery hills of ice.

'The glacier to the eastward of Jones River, an immense field of ice, was named "Agassiz Glacier," after the late Prof. Louis Agassiz, whose researches in glacial physics are well known. It extends for nearly 50 miles along the base of the St. Elias Alps, and is probably 15 to 20 miles across. It may cover 1,000 square miles of land, but half to two-thirds of that would certainly be within a safe estimate. Its thickness could only be inferred, but if resting on flat land, which is probable from the appearance of the surrounding country, it must be nearly 1,000 feet on an average, as shown by barometrical surveys. The Agassiz moraine shows much igneous rock and appears black at a great distance.

'The great glacier to the west of Jones River, though not so well known in superficial extent as the Agassiz, may cover as much ground as the first-named. It was named the "Guyot," after the late Prof. Guyot, of Princeton College, New Jersey, also well known in scientific matters pertaining to glacial phenomena. Its rocks predominate towards a sedimentary character, and it appears of a light grey colour from a distance.

'That day's march over the glaciers told severely on all the Indian packers, they being fagged out and their foot gear worn to tatters. It also brought the party to near the base of the high, conspicuous range of hills called Chaix Hills, after Prof. Paul Chaix, President of the Geneva Geographical Society. At the base of the hills is a forest which the party tried to reach for camp, but the rushing branches of Jones River and an immense lake of huge floating icebergs interposed, and the party camped on the ice of the glaciers, with the prospect of getting off it towards Mount St. Elias very discouraging. The alpine lake, so gorged with ice that but little of its water could be seen, was named "Castina Lake," after the President of the Italian Geographical Society.

'On July 23 reconnoitring parties were sent right and left to find a way to the timber at the base of the hills across the stream, and one party was lost on the glacier until the next evening, delaying the advance by making searching parties necessary for a day or so until they came in. The party to the left, or westward, found a way out where Guyot Glacier had bridged an immense stream, and was shoving its foot into the forest, crushing immense trees into pulp and splinters. One tree of the forest measured 21 feet in circumference, and all were large. It is the nearest forest to Mount St. Elias, the Chaix Hills being clothed with grass, brush, and trees on the south side and with ice and snow on the northern slopes that connect with the glaciers and névé of Mount St. Elias.

' On July 25 the party attempting to make the ascent got away at noon, when the last searching party got in, and swung around the next spur of the Chaix Hills, which brought all of Mount St. Elias in full view, from the base to the top, apparently 10 to 12 miles away. Coming around the spur brought the party upon a new glacier, 6 or 7 miles wide and about 10 to 15 miles long, coming directly from the south side of Mount St. Elias, being formed at the foot of the glaciers on that side of the great mountain. It was named "Tyndall Glacier," after Prof. Tyndall, of London, and its bed gave the party a direct way to the base of the mountain. All was now thoroughly alpine in character. As far as the eye could reach everything was shrouded in ice and snow for miles. No winter scene in the polar regions could be more desolate. It was an alpine valley, grand beyond possible description. Mr. Seton Karr, of the party, who had seen much mountain service in the European Alps, pronounced it immeasurably ahead of everything there for grandeur and gigantic proportions.

' At night the party camped near the base of Mount St. Elias, on a little oasis in the Arctic desert, where stunted willow and brush could be had for cooking the supper. That night there was a heavy frost, the stunted brush being covered with hoar frost, and ice forming on a half-full tin cup so thick that it could be inverted without spilling its contents. The party was now less than 1,000 feet above the snow level too, as shown by the barometer.

' The party for the ascent started out next morning (July 26) at 6 o'clock with bright weather, the plan being to go all day and night and until late the next night, or to make about 40 hours' continuous marching, with an occasional short rest, short enough to prevent chilling. The party consisted of Lieut. Schwatka, Seton Karr, and Wood. The barometer being read at the bottom at camp No. 2 by Professor Libbey, the party took about 6 lbs. each, having spare clothing, two Esquimaux reindeer coats, 60 feet of rope, two ice axes, and alpenstocks, ice croppers, mercurial and aneroid barometers, hypsometer, prismatic compass, thermometers common and clinical, &c., altogether about 20 lbs. to each party. They made a long detour of the Tyndall Glacier until 8 o'clock, when the crevices in the ice became so large and the snow bridges across them so dangerous that the party was tied to a common rope—Wood, the lightest, ahead, Schwatka second, and Seton Karr last.

' Red snow in large patches was passed about 9 o'clock, and snow fleas were seen near this time. At 10.15 the party could see all the glaciers on the south side of Mount St. Elias, not one of which broke its course into a hanging or falling glacier. All were from 300 to 3,000 feet in almost perpendicular descent, and all were clearly impassable. The rock ridges and buttresses were the only things left by which to ascend, and the most feasible of these was started for, but before it was reached it was seen to be perpendicular, between glaciers at places, and impassable.

' Shortly after the Tyndall Glacier at its head began yawning in fearful crevices of 10, 20, and 30 feet across, with few snow bridges, and the ice breaking into seams ahead, the ice ridge being so narrow

that it was at times only wide enough for one member of the party at a time to pass. It was like walking on the comb of a steep roof, with crevices hundreds of feet deep on either side.

'The huge seams reached, the party was forced off the steep glacier on to a ridge, which it was thought might connect with a better part of the mountain, where the ascent could be continued. By 2 o'clock light patches of clouds commenced forming on the mountain-side, and a heavy fog hung over the Chaix Hills, which by 5 o'clock had settled over everything above 7,000 feet, and from which Mount St. Elias did not emerge for four days after. By 5 o'clock the party had ascended the southern spur of Mount St. Elias, getting a good view of all the approaches on that side, and Mr. Seton Karr then pronounced it utterly inaccessible from the south.

'The low clouds rolling on made all further attempts futile. The barometer read at the places gained by the members showed an ascent altogether above the sea level of about 7,200 feet, nearly all of which was above the snow level. This gave to the "Times" party, it is believed, the alpine record of the highest climb above the snow level ever made, certainly the highest on an almost wholly unknown mountain. The party returned to Icy Bay well satisfied with its record. Its geographical results were beyond its expectations. A few only have been mentioned here.

'Three immense peaks, from 12,000 to 8,000 feet high, were named after the President, "Cleveland Peak," the Secretary of the Navy, "Whitney Peak," and the commander of the "Pinta," "Nichols Peak." Returning from Icy Bay to Yakutat Bay a swamp was encountered, and the party barely escaped. At Yakutat three separate excursions were made and many new geographical features mapped. Ethnological collections and photographs were secured by Prof. Libbey, there being about 200 of the latter. Mr. Seton Karr made many fine sketches, about 50 in number, while scientific observations were made at all available and necessary points. Altogether the party, for the short time it was absent, and considering the obstacles it had to overcome, has achieved a most thorough and substantial success, but it will require a book to chronicle its accomplishments in full.

'FREDERICK SCHWATKA.'

A NEW ASCENT OF SCA FELL.

BY WM. CECIL SLINGSBY.

(Read before the Alpine Club, April 6, 1886.)

LAST March a party of three—consisting of Mr. Geoffrey Hastings, Mr. J. Mason, and myself—made what I believe to be a new ascent of Sca Fell—I mean straight up Deep Gill from Lord's Rake—a short account of which may interest the Club. As most of those who have climbed amongst the Cumberland fells know, it is a very common occurrence to come upon steep, deeply cut, and square-walled gullies, which run up to the top ridges of the higher fells. Very frequently, too, some

huge rock has fallen from the crags above into one of these gills, and has more or less blocked it up, or has got jammed fast, and forms a natural arch, like that in Mr. Cust's gully. Deep Gill, which is one of the wildest gullies in the district, is blocked up in two places by fallen crags, and (with possibly a solitary exception a few years ago, in a time of extremely deep snow, when the lower part of the gill was literally choked up with snow; two climbing-men, both strangers, walked down the snow the whole way without knowing that they had even done anything remarkable) I think this gill has never before been traversed. Early last year Hastings, three others, and I tried very hard to force a passage, but, fortunately for us, we failed at the first block on account of ice-glazed rocks. Had we succeeded here, we should have run a very fair chance of being pounded between the two blocks. This time, after a couple of hundred steps had been cut in the snow in Lord's Rake and at the bottom of Deep Gill, which joins the former at right angles, we reached the first block—a large rock perhaps 15 feet square, which overhangs the gill, and so forms a cave. Below the rock the snow was moulded into most fantastic shapes by occasional water-drips from above. At the right hand of the big rock a few small stones are jammed fast between it and the side of the ravine, and they afford the only route up above the rock. These stones can be reached from the back of the little cave, and occasionally from the snow direct. Hastings—who is a very powerful fellow and a brilliant climber—and I got on the stones, as we did last year. He then stood on my shoulder, and, by the aid of long arms and being steadied by me, he reached a tiny ledge, and drew himself up. Mason and I found it no child's play to follow him with the rope.

Some two hundred more steps in hard snow brought us to the only place where we could attack the second block. Here three fallen rocks stop the way, and on the left hand is the well-nigh ledgeless cliff which terminates far away overhead in the Sca Fell Pinnacle, or Sca Fell Pillar. On the right, a high perpendicular wall effectually cuts off the gill from the terraces of Lord's Rake. On the left hand of the gill, a small tongue of rock, very steep, juts out perhaps 40 feet down the gully from the fallen block nearest to the Pinnacle wall, and forms a small crack, and this crack is the only way upward. From a mountaineer's point of view, the stratification of the rocks here is all wrong. The crack ends in a chimney about 20 feet high, between the wall and a smoothly polished boss of rock. Hastings, still leading, found the crack to be difficult, but climbed it in a most masterly way. All loose stones, tufts of grass and moss had to be thrown down, and, in the absence of hand and foot hold, the knees, elbows, thighs, and other parts of the body had to do the holding on, whilst, caterpillarlike, we drew ourselves upward bit by bit. The chimney is best climbed by leaning against the Pinnacle wall with one's back and elbows, and, at the same time, by walking with the feet flylike up the boss opposite. From the top of the boss a narrow sloping traverse, perhaps 12 feet long, leads into the trough of the gill. With a rope this is an easy run; without one it would not be nice. A stone thrown down from here falls over both blocks and rolls down the snow out of the mouth

of Lord's Rake on to the screes far away below. The crack, chimney, and traverse, short distance though it is, took us about an hour to pass.

Just beyond this place the ordinary route from Lord's Rake joins Deep Gill, and for the ascent of Sca Fell there is no further difficulty. We wished, however, to climb the Sca Fell Pinnacle—first ascended, be it known, O! Alpine climbers, by Mr. W. P. Haskett Smith, a gentleman who has done much brilliant rock-climbing in Cumberland, and who, unfortunately, is not in our Club. His ascent, made about eighteen months ago, is a rival of that of the Ennerdale Pillar, made by Mr. Leslie Stephen about the year 1854.

The climb from Deep Gill to the gap from which the Pinnacle is ascended is a very good one, where two men can do much better than one. The Pinnacle itself from the gap is perhaps 25 feet high, and is really a first-rate little climb, where the hands and the body have to do the bulk of the work. The old whisky-bottle which used to be on the Pillar rock has been taken by Mr. Haskett Smith on to the Sca Fell Pinnacle, and so far it contains very few names. The Pinnacle can be reached very quickly from the top of the Broad Stand route, from Mickledore up to Sca Fell. For further information I refer the members of the Alpine Club first of all to the fells and gills themselves, and next to the November number, 1884, of 'All the Year Round.' Do not let us be beaten on our own fells by outsiders, some of whom consider ice-axes and ropes to be 'illegitimate.' Let us not neglect the Lake District, Wales, and Scotland, whilst we are conquerors abroad.

THE ACCIDENT ON THE MATTERHORN.

WE deeply regret to announce that yet another fatal accident has occurred on the Matterhorn, resulting in the loss, indeed, of one life only, but under the most painful and distressing circumstances.

On the morning of August 17 last four parties of travellers left the lower hut on the mountain and attained the summit. One of them, that of Mr. Mercer, reached Zermatt the same night. The three others were all much delayed by a sudden storm which came on during the descent. Two Dutch gentlemen, led by Moser and Peter Tangwold, regained the lower hut at an advanced hour of the night; but Monsieur A. de Falkner and his son (with J. P. and Daniel Maquignaz, and Angelo Ferrari, of Pinzolo), and Messrs. John Davies and Frederick Charles Borckhardt (with Fridolin Kronig and Peter Aufdemblatten), were forced to pass the night out; the latter party, indeed, spent part of the next day (August 18) out as well, and Mr. Borckhardt unfortunately succumbed to the exposure in the afternoon. He was the youngest son of the late vicar of Lydden, and forty-eight years of age. Neither he nor Mr. Davies was a member of the Alpine Club.

The facts relating to the accident may be gathered from Mr. Davies' letter to the 'Times' of August 28, which runs as follows:—

'SIR,—Since leaving Zermatt I have seen and heard different

accounts of this distressing occurrence, and, being closely associated with it, I think it right to give actual facts.

‘ My friend Mr. Borckhardt and I, who were in good training, reached Zermatt on Saturday, the 14th inst., and after interviewing several guides and examining their testimonials, and consulting Mr. Seiler, the proprietor of our hôtel, we engaged two guides who held Government certificates, and Mr. Seiler mentioned that they were experienced mountaineers, and could conduct us in the ascent of the Matterhorn, and that gentlemen who had employed them were fully satisfied and had continued their services.

‘ The weather was exceedingly fine on Sunday and Monday, the 15th and 16th inst., and on Monday morning we watched with a telescope persons making the ascent. At 2 o'clock in the afternoon of that day, after leaving the necessary arrangements to the guides, we started for the “ Lower Hut ” on the mountain and got there at 7 P.M., stayed the night, and at about 3 A.M. on Tuesday morning left the hut by moonlight. It is a very stiff climb, as may be supposed by those unacquainted with the mountain. We got to the summit shortly before 9 A.M., not feeling in the least fatigued. While there two Italians and their guides came up. After remaining about twenty minutes at the top it hailed very slightly, and both parties, *i.e.* we and the Italians, commenced the descent about the same time. When we got to the steep snow slope called “ the saddle,” the hailstorm had become exceedingly heavy, and much time was occupied in cutting steps and feeling our way through the snow down the precipitous rocks. We worked and walked incessantly from about 9 A.M. until nearly 7 P.M. on Tuesday. Night was coming on, and we were exhausted and numbed by the intense cold. Our clothing was covered with ice, and, although woollen throughout, was quite insufficient to protect us in this unusual storm, such as has not been experienced for many years at this season of the year. At 7 P.M. we halted at the top of a very steep couloir or ravine, which in our condition we were unable to face. We begged the guides, who were married men with families, to leave us and push on if they could. They declined to do so. The Italians remained near us all night and exchanged shouts. We hourly expected death. The hail continued until 2 or 3 A.M. on Wednesday, about eighteen hours in all. The guides endeavoured to make us stand up and exert ourselves. At daybreak we were unable to move and told the guides to leave us, but they again refused. Later in the day repeated efforts were made to take us down the mountain. The guides got my friend up several times, but he was quite unable to stand and had become exceedingly feeble, and I felt that unless help could be procured there was no chance of his life. As the day advanced I could stand and with difficulty move. We had no brandy left, and our wine and food were frozen. We remained at the same spot from 7 on Tuesday evening until 1 on Wednesday afternoon. We shouted and heard shouts far off down the mountain, but no one came. My friend was growing weaker every moment. He could not be moved by our guides, and it seemed certain death if he remained. The guides, who were frostbitten and exhausted, urged me to leave in order to hurry

up a rescuing party to the exact spot. We left about 1 p.m., and had then been on the mountain thirty-four hours. About two hours later we met a party of guides sent up at 8 a.m. by Mr. Seiler. We directed them to the spot. They doubted that my friend was still living. We assured them that he was alive, and hurried them on and directed them to give him brandy and bring him down without delay. We still hoped that he could be saved. We got to the hut about 5 p.m. Late in the evening we heard that the rescue party had, about three hours after we met them, found my friend dead.'

Mr. Davies was interviewed by a correspondent of the 'Pall Mall Gazette,' who published his narrative (number of August 24), which we reprint, as it is of the highest importance to have before us all the information given by the surviving traveller:—'We left Zermatt about two o'clock on Monday afternoon, in capital spirits. The weather was lovely, and everything promised a favourable ascent. We had two guides, whose names were on the official list, whose references were satisfactory, and who were twice over recommended to us by Herr Seiler, whose advice we sought before we engaged them, and who gave them excellent credentials. We placed ourselves in their hands, as is the rule in such cases, ordered the provisions and wine which they declared to be necessary, and made ready for the ascent. I had lived among hills from my boyhood. I had some experience of mountaineering in the Pyrenees, where I ascended the highest and other peaks. In the Engadine I have also done some climbing; and last week, together with Mr. Borckhardt, who was one of my oldest friends, I made the ascent of the Titlis, and made other excursions among the hills. Mr. Borckhardt was slightly my senior, but as a walker he was quite equal to me in endurance. When we arrived at Zermatt last Saturday we found that parties were going up the Matterhorn on Monday. We knew that ladies had made the ascent, and youths; and the mountain had besides been climbed by friends of ours whose physical strength, to say the least, was not superior to our own. It was a regular thing to go up the Matterhorn, and we accordingly determined to make the ascent.

'We started next morning at half-past two or three. We were the third party to leave the cabin, but, making good speed over the first stage of the ascent, we reached the second when the others were breakfasting there, and then resumed the climb. Mr. Mercer, with his party, followed by the Dutch party, started shortly before us. We met them about a quarter past eight returning from the top. They said that they had been there half an hour, and that there was no view. We passed them, followed by the Italians, and reached the summit about a quarter to nine. The ascent, although toilsome, had not exhausted us in the least. Both Mr. Borckhardt and myself were quite fresh, although we had made the summit before the Italians, who started together with us from the second hut. Had the weather remained favourable, we could have made the descent with ease.

'Even while we were on the summit I felt hail begin to fall, and before we were five minutes on our way down it was hailing heavily. It was a fine hail, and inches of it fell in a very short time, and the

track was obliterated. We pressed steadily downwards, followed by the Italians, nor did it occur to me at that time that there was any danger. We got past the ropes and chains safely and reached the snow slope on the shoulder. At this point we were leading. But as the Italians had three guides and we only two we changed places, so that their third guide could lead. They climbed down the slope, cutting steps for their feet in the ice. We trod close after the Italians, but the snow and hail filled up the holes so rapidly that, in order to make a safe descent, our guides had to recut the steps. This took much time—as much as two hours, I should say—and every hour the snow was getting deeper. At last we got down the snow slope on to the steep rocks below. The Italians were still in front of us, and we all kept on steadily descending. We were still in good spirits, nor did we feel in any doubt that we would reach the bottom. Our first alarm was occasioned by the Italians losing their way. They found their progress barred by precipitous rocks, and their guides came back to ours to consult as to the road. Our guides insisted that the path lay down the side of a steep couloir. Their guides demurred; but after going down some ten feet they cried out that our guides were right, and they went on—we followed. By this time it was getting dark. The hail continued increasing. We began to get alarmed. It seemed impossible to make our way to the cabin that night. We had turned to the right after leaving the couloir, crossed some slippery rocks, and after a short descent turned to the left and came to the edge of the precipice where Moseley fell, where there was some very slight shelter afforded by a projecting rock, and there we prepared to pass the night, seeing that all further progress was hopeless. We were covered with ice. The night was dark. The air was filled with hail. We were too cold to eat. The Italians were about an hour below us on the mountain side. We could hear their voices and exchanged shouts. Excepting them, we were thousands of feet above any other human being. I found that while Borckhardt had emptied his brandy-flask, mine was full. I gave him half of mine. That lasted us through the night. We did not try the wine till the morning, and then we found that it was frozen solid.

‘Never have I had a more awful experience than that desolate night on the Matterhorn. We were chilled to the bone, and too exhausted to stand. The wind rose, and each gust drove the hail into our faces, cutting us like a knife. Our guides did everything that man could do to save us. Aufdemblatten did his best to make us believe that there was no danger. “Only keep yourselves warm; keep moving; and we shall go down all right to-morrow, when the sun rises.” “It is of no use,” I replied; “we shall die here.” They chafed our limbs, and did their best to make us stand up; but it was in vain. I felt angry at their interference. Why could they not leave us alone to die? I remember striking wildly but feebly at my guide as he insisted on rubbing me. Every movement gave me such agony, I was racked with pain, especially in my back and loins—pain so intense as to make me cry out. The guides had fastened the rope round the rock to hold on by, while they jumped to keep up the circulation of the blood. They

brought us to it, and made us jump twice or thrice. Move we could not; we lay back prostrate on the snow and ice, while the guides varied their jumping by rubbing our limbs and endeavouring to make us move our arms and legs. They were getting feebler and feebler. Borckhardt and I, as soon as we were fully convinced that death was imminent for us, did our best to persuade our guides to leave us where we lay and make their way down the hill. They were married men with families. To save us was impossible. They might at least save themselves. We begged them to consider their wives and children and to go. This was at the beginning of the night. They refused. They would rather die with us, they said; they would remain and do their best.

‘Borckhardt and I talked a little as men might who are at the point of death. He bore without complaining pain which led me to cry out from time to time. We both left directions with the guides that we were to be buried at Zermatt. Borckhardt spoke of his friends and his family affairs, facing his death with manly resignation and composure. As the night wore on I became weaker and weaker. I could not even make the effort necessary to flick the snow off my companion’s face. By degrees the guides themselves began to lose hope. The cold was so intense, we crouched together for warmth. They lay beside us to try to impart some heat. It was in vain. “We shall die!” “We are lost!” “Yes,” said Aufdemblatten, “very likely we shall.” He was so weak, poor fellow, he could hardly keep his feet; but still he tried to keep me moving. It was a relief not to be touched. I longed for death, but death would not come.

‘Towards half-past two on Wednesday morning—so we reckoned, for all our watches had stopped with the cold—the snow ceased, and the air became clear. It had been snowing or hailing without intermission for eighteen hours. It was very dark below, but above all was clear, although the wind still blew. When the sun rose we saw just a gleam of light. Then a dark cloud came from the hollow below, and our hopes went out. “Oh, if only the sun would come out!” we said to each other I do not know how many times. But it did not, and instead of the sun came the snow once more. Towards seven, as near as I can make it, a desperate attempt was made to get us to walk. The guides took Borckhardt, and between them propped him on his feet and made him stagger on a few steps. They failed to keep him moving more than a step or two. The moment they let go he dropped. They repeated the same with me. Neither could I stand. I remember four distinct times that they drove us forward, only to see us drop helpless after each step. It was evidently no use. Borckhardt had joined again with me in repeatedly urging the guides to leave us and to save themselves. They had refused, and continued to do all that their failing strength allowed to protect us from the bitter cold. As the morning wore on, my friend, who during the night had been much more composed and tranquil than I, began to grow perceptibly weaker. We were quite resigned to die, and had, in fact, lost all hope. We had been on the mountain from about 3 A.M. on Tuesday to 1 P.M. on Wednesday—thirty-four hours

in all. Eighteen of these were spent in a blinding snowstorm, and we had hardly tasted food since we left the summit at nine on the Tuesday morning. At length (about one) we heard shouts far down the mountain. The guides said they probably proceeded from a search party sent out to save us. I again urged the guides to go down by themselves to meet the searchers, and to hurry them up. This they refused to do unless I accompanied them. Borckhardt was at this time too much exhausted to stand upright, and was lying in a helpless condition. The guides, although completely worn out, wished to attempt the descent with me, and they considered that by so doing we should be able to indicate to the searchers the precise spot where my friend lay, and to hasten their efforts to reach him with stimulants. Since early morning the snow had ceased falling. We began the descent, and at first I required much assistance from the guides, but by degrees became better able to move, and the hope of soon procuring help from the approaching party for my poor friend sustained us. After a most laborious descent of about an hour and a half we reached the first members of the rescue party, and directed them to where Borckhardt lay, requesting them to proceed there with all haste, and, after giving him stimulants, to bring him down to the lower hut in whatever condition they found him. We went on to the hut to await his arrival, meeting on the way Mr. King, of the English Alpine Club, with his guides, who were hurrying up with warm clothing. A few hours later we heard the terrible news that the relief party had found him dead.'

When it was found that the party did not return and the weather continued very bad, a search party was organised by Mr. H. Seymour King, M.P., whose letter to the 'Times' explains itself, and is backed by all the other members of the Alpine Club then at Zermatt:—

'SIR,—I send you a brief account of the circumstances which led to the death on the Matterhorn yesterday. Messrs. F. C. Borckhardt and J. Davies, with the guides Peter Aufdemblatten and Fridolin Kronig, both of Zermatt, left the lower hut on the Matterhorn about three on the morning of Tuesday, August 17, in perfectly fine weather, and reached the summit at about 9 A.M. As they commenced the descent the weather suddenly changed and it began to snow heavily. They continued their descent very slowly until at 7 P.M. they halted under a rock on the *arête* just below the shoulder, near the spot where Dr. Moseley was killed a few years ago. It had snowed heavily the whole day, and the snow continued to fall throughout the night and up to past noon on the following day, by which time both guides and travellers were terribly exhausted. They had no cognac left, and their wine was frozen. Mr. Borckhardt never got any further. The guides state that he was well enough to have been made to walk, but they did not dare to move down with both travellers at once lest they should both slip or collapse at the same time. Instead of staying all together, as more experienced guides would have done, and keeping Mr. Borckhardt warm and awake until help came, they determined at about 1 P.M. to leave him alone on the mountain. According to their account, the snow had ceased and the sun had begun to shine when they left him. At that moment a relief party was not far off, as the guides

must have known. They heard the shouts of the relief party soon after leaving Mr. Borckhardt, and there was, so far as I can see, no pressing reason for their departure. They reached the lower hut at about 5 P.M., and at about the same time a rescue party from Zermatt, which had met them descending, reached Mr. Borckhardt, and found him dead, stiff, and quite cold, and partly covered with freshly fallen snow. No doubt he had succumbed to drowsiness soon after he was left.

'The moral of this most lamentable event is plain. The Matterhorn is not a mountain to be played with; it is not a peak which men ought to attempt until they have had some experience of climbing. Above all it is not a peak which should ever be attempted except with thoroughly competent guides. In a snowstorm no member of a party should ever be left behind and alone. He will almost certainly fall into a sleep, from which it is notorious that he will never awake. If he will not walk, he must be carried. If he sits down, he must be made to get up. Guides have to do this not unfrequently. A stronger and more experienced party would undoubtedly have reached Zermatt without misfortune. In fact, one party which was on the mountain on the same day did reach Zermatt in good time.

'Hôtel du Mont Rose, August 19.'

'SIR,—We, the undersigned members of the Alpine Club, having considered the letter Mr. Seymour King has addressed to you, and having gone into the evidence upon which it was written, beg to state that it contains in our opinion a correct statement of the facts.

'We are, sir, your obedient servants,

SERMONETA,	AUGUST LORRIA,
GEORGE F. VERNON,	FELIX O. SCHUSTER,
STAFFORD F. STILL,	G. HARRIS HODGSON,
HUGH E. H. STUTFIELD,	H. SYDNEY SEYMOUR,
PAUL GÜSSFELDT,	F. J. CHURCH.
J. T. WILLS,	

'Hôtel du Mont Rose, August 20.'

We also reprint the letter sent by M. de Falkner from Gressoney on August 28 to the 'Journal de Genève' of September 4 (of most of which a translation appeared in the 'Daily News' of September 7), as that gentleman actually spent the night of August 17 out on the mountain, though considerably lower than Messrs. Davies and Borckhardt's party. One word is altered in the letter in accordance with M. de Falkner's correction in the 'Rivista Alpina Italiana' for September (p. 307), viz. '*ahuris*' for '*exténués*.'

'Le correspondant de la "Nouvelle Gazette de Zürich," dont vous avez reproduit les appréciations, termine son article en disant: "Une enquête est nécessaire, ne fût-ce que pour disculper absolument les guides du reproche d'avoir en quoi que ce soit manqué à leur devoir." Il semble résulter de cette phrase qu'il plane un doute sur la conduite des guides, et pour plusieurs de nos collègues anglais et austro-allemands le doute était presque, à mon départ de Zermatt, une certitude.

Mon impression générale n'a pas été bonne, et dans un cas particulier que je relèverai plus tard, elle leur est parfaitement contraire.

' Pendant la nuit, dans la cabane, les guides ont fait beaucoup trop de bruit ; ce n'est ni consciencieux ni respectueux envers les personnes qu'ils doivent conduire et dont ils devraient ménager les forces sous tous les rapports. Je ne prononcerai ici aucun nom ; j'ai fait là-dessus des observations à l'un des guides, et il m'a répondu : " Nous ne savions pas comment dormir et ne pouvions faire autrement ! " S'il eût été mon guide, je l'aurais renvoyé immédiatement à Zermatt. Le fait est qu'on s'est mis autour du feu pour cuire de la viande qu'on avait apportée de Zermatt. J'espère qu'on fixera une heure, par exemple 9 heures, après laquelle tout le monde est prié de faire silence.

' La caravane de MM. Davies et Borckhardt, qui nous précédait, a marché, selon moi, trop vite, et quand nous les avons rejoints sur la cime du Cervin, ces messieurs semblaient déjà fatigués, si bien que j'ai offert à M. Davies une tasse de vieux porto dont le reste nous a été plus tard si utile.

' Le temps était déjà menaçant et j'insistai un peu pour presser le départ de ces messieurs, d'autant plus que mon chef guide, Jean-Pierre Maquignaz, prétendait qu'il fallait laisser partir ceux qui étaient arrivés les premiers. Nous laissâmes écouler un quart d'heure à peu près, c'était 10 heures et demie, et nous partîmes aussi.

' Il commençait à neiger, mon expérience me disait qu'il fallait se hâter, et j'enjoignis à Maquignaz de dépasser ces messieurs ; il y consentit d'autant plus facilement que le guide même de M. Davies nous offrit de passer les premiers, ce qui d'ailleurs ne pouvait que leur être avantageux, puisque nous leur tracions le chemin. A ce moment l'un de leurs guides, Fridolin Kronig, me parut nerveux et la manière dont la caravane était dirigée n'était pas très bonne, ce qui du reste peut s'expliquer par le fait que les deux touristes étaient déjà ahuris et vu les conditions toujours plus difficiles que le terrain présentait. L'un de ces messieurs me dit, en passant : " I wish I had never come."

' Nous procédâmes avec calme, mais en avançant toujours plus lentement ; tout point d'appui solide disparaissait sous la neige ; mon fils marchait le premier, puis Maquignaz père, puis moi, puis Maquignaz Daniel, et en dernier, parfaitement ferme sur ses crampons, mon guide du Tyrol italien, Angelo Ferrari de Pinzolo. Ces trois guides constituaient certainement une caravane solide, mais aussi bien plus lente à se mouvoir. Deux de nos piolets étaient restés plus bas, on ne pouvait avancer qu'avec la plus grande prudence. D'autre part l'idée de ne pas pouvoir atteindre la cabane ne nous venait pas à l'esprit, et en apparence tout marchait comme dans des circonstances ordinaires.

' Mais nous n'avions pu prévoir la conduite de la caravane qui nous précédait, composée des deux guides Moser et Taugwalder, et de deux Hollandais, aimables jeunes gens, mais sans expérience de la montagne. Cette caravane, à un moment donné, a fui devant le danger et est arrivée à 10 heures du soir à la cabane, mais avec une telle rapidité que je n'hésite pas à affirmer que cette descente présentait les plus grands risques. Je suis convaincu qu'une résolution désespérée n'était

pas commandée par les circonstances, et en ce cas-ci la réussite ne l'excuse pas. Ces messieurs, arrivés à un certain point de la montagne et à un endroit où l'on descend par une corde fixe, tinrent conseil entre eux, les deux guides se disant : " Wir sind verloren ; was machen wir da ? " (je tiens le tout de M. Walter, l'un des deux Hollandais). Ne croyant pas pouvoir descendre autrement, ils enlevèrent la corde pour la placer à un endroit qui leur paraissait plus propice ! Les deux guides avaient parfaitement conscience de ce qu'ils faisaient et du danger qu'ils pouvaient faire courir à ceux qui les suivaient ; car ils firent une grande trace dans la neige pour nous signaler la route ! Mais nos traces s'effaçaient presque à mesure sous nos pas. J'ai réclamé contre les deux guides directement au gouvernement du Valais.

' Notre caravane, arrivée à cet endroit, n'aperçut pas la corde et perdit ainsi presque une heure et demie à chercher son chemin, qu'elle ne retrouva que par hasard. Dans cet intervalle, la caravane Davies nous avait presque rejoints et ce fut là que nous les vîmes pour la dernière fois. L'un d'eux disait : *We are all lost*, et l'autre ne pouvait pas se décider à descendre en un très mauvais endroit. En attendant, il devenait clair qu'à moins de nous risquer la nuit, nous n'aurions pu atteindre la cabane et peut-être même pas la vieille hutte. En effet, vers huit heures, ayant atteint, traversant des 'platten' très dangereuses, un petit col sur l'arête qu'il faut contourner pour arriver à la vieille cabane, Maquignaz prononça l'arrêt de clôture pour ce jour-là, croyant que le danger de traverser pendant la nuit était plus grand que celui de s'arrêter. Et il avait raison. Nous étions tous dispos, notre moral n'avait pas souffert et dans ces conditions on peut résister à quelque chose de bien plus grave que la nuit qui nous attendait. Nous étions bien couverts de laine, munis de bonnets de tourmente, de très bons souliers, gants de laine ou fourrés, gros bas de laine d'Ecosse ; mon habit était un peu léger, le plus fort ayant été oublié à la maison, aussi ai-je souffert le plus.

' Les provisions étaient bien réduites, mais nous n'avions pas faim. Il nous restait une bouteille d'inferno et une demi-bouteille de porto vieux. Le vin des guides, qui contenait probablement 50 pour cent d'eau, gela pendant la nuit, mais des œufs frais, que je porte dans une boîte en laiton et qui étaient dans le sac, ne gelèrent pas et nous rendirent un excellent service. Il ne nous fut pas possible, à notre grand désappointement, d'allumer la lampe à esprit-de-vin pour faire du thé.

' La nuit fut néanmoins terrible. Nous avions eu la précaution, en arrivant à cet endroit, de faire tomber la neige de nos habits, néanmoins nous étions couverts d'une cuirasse de glace qui craquait quand nous nous rapprochions pour nous réchauffer mutuellement et parfois, quand passait une bouffée de vent, il nous semblait que toute la laine que nous avions sur le corps ne fût que toile d'araignée.

' Pourtant pendant toute la nuit il ne fut pas proféré un seul mot de plainte ou de crainte. Nous entendîmes trois ou quatre fois les autres, qui étaient peut-être à une heure de distance, 'jodler' et on leur répondit. Le jour et le mouvement nous remirent aussitôt. Nous voulûmes attendre qu'il fit bien clair et nous quittâmes enfin notre

bivouac peu confortable, un emplacement d'un mètre et demi peut-être d'étendue, au bord de l'arête, et sur lequel, à cinq, nous avons passé la nuit, liés à nos cordes gelées. Un quart d'heure environ après notre départ, nous entendîmes le guide Kronig appeler en nous disant : Envoyez-nous deux guides, des provisions et des couvertures.

‘Vers 7 heures nous étions à la vieille cabane, où j'avais décidé de m'arrêter pour consommer ce qu'il nous restait de provisions et faire du thé ; il neigeait très fort, mais pourtant un peu de soleil apparaissait de temps à autre et nos glaçons fondaient. Je dépêchai, aussitôt après qu'il eût mangé un morceau, Daniel Maquignaz vers la cabane d'en bas pour qu'il eût à hâter l'arrivée du sauvetage, que je croyais voir arriver à tout moment. Vers 9 heures et demie nous nous remîmes en marche, et vers 10 heures et demie nous rencontrâmes le jeune guide Aloïs Kronig et Imboden de Saint-Nicolas, auxquels je dis de se presser. Nous ayant dépassés, il se retourna et me dit : “ Les autres n'ont pas besoin de venir, ” commission que du reste je n'exécutai pas. Je dois mentionner qu'il paraît y avoir eu une querelle entre les guides de Zermatt et ceux de Saint-Nicolas, à qui ferait partie du sauvetage, et qu' Imboden de Saint-Nicolas fut même menacé. J'espère que l'enquête mettra cela au clair.

‘A midi, nous entrions dans la cabane, qui était pleine de monde : c'étaient les provisions et le sauvetage envoyés par le brave Seiler qui venaient d'arriver avec un jeune homme, que je pris pour un docteur et qui était un photographe de Zermatt, grand ami des Seiler. En un instant nous étions dépouillés de nos habits et enveloppés dans les huit couvertures de la cabane, bien frottés aux mains et aux pieds par le photographe et par notre guide Ferrari. Une tasse de chocolat chaud et un verre de champagne nous mirent bientôt en réaction sous nos couvertures. Je profitai d'un guide qui partait pour Zermatt pour faire dire à M. Seiler de nous attendre vers 5 heures, qu'il eût à le faire savoir à ma femme, si elle était au Riffel, et à nous préparer un bon dîner. Le photographe nous offrit de faire attendre au lac Noir les mulets qui avaient apporté les provisions, ce que j'acceptai, malgré les protestations indignées de mon fils. Je dois dire que, pendant ce temps, nous nous étonnions de ne pas voir partir le sauvetage et d'entendre que Kronig était revenu parce qu'il n'avait pas de corde ! Je ne sais à quelle heure ils sont partis, puisque nous nous étions rendormis. Nous fûmes réveillés par l'arrivée des collègues alpinistes du Club Anglais et Austro-Allemand, impatients de nouvelles, et désirant prendre part au sauvetage. Enfin, vers 4 heures, M. Davies arriva et je partis avec la conviction que M. Borckhardt allait revenir sauvé.

‘Pour conclure, je suis persuadé qu'il y aurait lieu de renforcer la discipline chez les guides de Zermatt. Tout en reconnaissant les difficultés qu'ont rencontrées les deux guides Kronig et Aufdemblatten, il est à regretter qu'ils aient abandonné M. Borckhardt avant sa mort.

‘Comme on ne saurait réagir contre le goût pour les ascensions au Cervin, ce qui causerait une perte à la vallée, il faudrait :

‘1. Remettre en état de service la vieille cabane en la pourvoyant du petit fourneau qui est à présent à la cabane d'en bas, de couver-

tures, une boîte de médicaments comme il y en a de si bien organisées au Tyrol allemand et au Trentin, et d'une corde de secours.

' 2. Mettre des signaux sur l'arête pour indiquer le chemin en cas de mauvais temps.

' 3. Remplacer les petites cordes par de plus fortes.

' 4. Mettre en meilleur état la cabane d'en bas : en la fournissant de matelas, des couvertures nécessaires, d'une boîte à médicaments et de cordes de secours ; d'un fourneau avec au moins quatre trous ; d'un gardien permanent responsable des objets appartenant à la cabane ; d'un moyen de communication, un téléphone par exemple, sur Zermatt. (Il y en a un maintenant entre le col d'Ollen et Alagna.) L'état de propreté de la cabane laisse beaucoup à désirer, messieurs les guides s'en vont sans laver les objets employés. Il n'y a pas de râtelier pour les ustensiles de cuisine. On monte sur la paille du dortoir sans ôter ses souliers ; il devrait y avoir autour du dortoir des rayons pour que les touristes puissent y déposer leurs objets de toilette, ce qui faciliterait les départs. La cabane devrait enfin aussi être pourvue de vivres à un tarif fixé, vivres confiés au guide gardien.

' Tout cela faciliterait les ascensions, et contribuerait à les rendre plus sûres et les sauvetages plus faciles.

' En effet, si à minuit un gardien à la cabane avait pu communiquer avec Zermatt, le sauvetage aurait pu être à cinq heures à la cabane et à huit heures probablement sur le lieu où gisait M. Borckhardt. On aurait eu le temps de le transporter à la vieille cabane et peut-être on l'aurait sauvé.

' Ici j'ai un reproche à adresser à Moser et à Taugwalder ; je crois qu'ils ont manqué de jugement ; ils sont arrivés à 10 heures à la cabane. Après une heure de repos, ayant mangé, l'un d'eux, homme fort et courageux, guide de premier ordre, aurait dû descendre aussitôt à Zermatt avec la lanterne de la cabane. A 2 heures, il aurait pu être à Zermatt, à 7 heures le sauvetage aurait pu être à la cabane et vers 11 heures sur place, près de M. Borckhardt, qu'on aurait peut-être sauvé ; et dans tous les cas les guides auraient la conscience d'avoir fait tout leur devoir.

' M. Seiler, qui a tant fait pour sa vallée et auquel j'ai parlé des mesures à prendre pour l'avenir, m'a semblé très bien comprendre la portée de mes suggestions, mais il appartient aussi au département de police du canton du Valais de les imposer, si par hasard elles n'étaient pas écoutées. La dépense est du reste bien petite en comparaison de l'immense gain que le Cervin procure à Zermatt.

' J'espère, l'année prochaine, en descendant du Cervin, que nous voulons monter du côté d'Italie, pour nous rendre raison de quelques-unes des difficultés que nous avons rencontrées, pouvoir constater que toutes les mesures possibles pour assurer la vie aux nombreux ascensionnistes ont été amplement prises.

' Il ne me reste plus qu'à remercier Mme Seiler, le photographe de Zermatt et mes collègues des différents clubs alpins de l'empressement qu'ils nous ont montré en cette occasion et à vous prier, monsieur le rédacteur, etc.

' ALBERT DE FALKNER.'

On the question of the weather, the Rev. T. A. Lacey's evidence (in a letter to a contemporary) is interesting:—'On the evening of August 16, the day before the great snowstorm, nothing could be more promising than the appearance of the weather. I was with some friends at the Riffelberg Hôtel, proposing to ascend Monte Rosa on the morrow. We heard of the three parties in the hut on the Matterhorn. Everything looked well. But at midnight all was changed. It was still fairly clear overhead, but a damp, warm wind had succeeded the piercing cold of the evening, and the lower valley towards Zermatt was filled with dense white cloud. We looked at the weather, consulted our guides, and hurried back to bed. Two parties did start for Monte Rosa; their guides shook their heads at the weather, but "hoped" it would hold. They returned, after much suffering, late in the day. At eight o'clock in the morning the weather was still holding, but before nine the storm had suddenly burst. When a chill morning breeze meets the *Föhn*, loaded with vapour, what must happen will happen. It was then possible, even for men of no great experience, to foresee the storm, though not of course its terrible severity. What we saw on the Riffelberg the guides of the Matterhorn parties could see from the hut, and it is not easy to acquit them of recklessness in proceeding. If it be true that Moser, meeting the rest as he descended, warned them of what was coming, their conduct deserves perhaps a harsher word.'

It is clear from these accounts—quite apart from the exaggerated rumours which have been widely circulated—that neither traveller was an experienced climber, and that the guides were incompetent to fulfil their duties.

Mr. Davies' statement to the 'Pall Mall' interviewer is quite sufficient to show that he and his friend, though they had made several easy ascents, and were used to hills, ought never to have tried the Matterhorn. Unluckily the ascent has become the fashion, and so many incompetent travellers have been brought up and down safely that it seems often to be forgotten that the Matterhorn is one of the chief peaks of the Alps, and though among the best known, is not to be trifled with. We trust that Mr. Borckhardt's sad fate may in some degree check the unreasoning rush up the peak, for though it is the first fatal accident which has happened on it to an inexperienced climber, there have been many narrow escapes recorded and serious injuries received on the ascent.

Of the conduct of the two guides it is hard to know how to speak. We understand from persons who have employed them that they are fair men, capable of making the ordinary ascents, but not by any means in the first class. No doubt, had it not been for the storm, they might this time have brought their two travellers down safely, and the care they bestowed on their employers during that terrible night, as witnessed to by Mr. Davies, speaks very well for them. Indeed, their conduct during the night of August 17 seems to have been deserving of all praise. But it is under exceptional circum-

stances that a man shows whether he is a first-rate guide or not, and both Kronig and Aufdemblatten broke down completely in the face of the test to which they were afterwards subjected. We willingly admit that the test was a severe one, but the guides ought to have been more than equal to it. Men of more power and determination would under the circumstances have ignored the wailings of their companions. They would have taken matters into their own hands, and forced their two 'Herren' to obey them. Cramped, half frozen, exhausted though the whole party was in the early morning of August 18, the duty of the two guides was to force their employers to descend, however slowly and however painfully. Every step down brought them nearer the huts and help; while every minute spent in sitting in the snow contributed to benumb the limbs and wills of all four. We freely allow that the two guides were greatly handicapped by the absence of a third man, who was certainly required in the case of two inexperienced travellers. They should have known, first, that nothing is more fatal than remaining in snow without moving; and secondly, that their prolonged absence would to a certainty cause search parties to come up after them. If they did not know these facts, they were unfit to be guides; if they did, they acted in a manner that merits the severest censure. Making all allowance for the very trying position in which the two men found themselves, we must express our opinion that they proved themselves incapable guides. It is very much to be regretted that all candidates for the status of a guide have to pass the same examination, as it is obvious that the qualifications required from a glacier guide are very different from those required in one who only goes over grass passes; and even among the glacier guides, few, very few, have the natural gifts which fit them for difficult ascents and passages. Some reform is clearly called for in the former case; though in the latter we must trust largely to natural selection, and to the advice of climbers qualified to give an opinion.

We cannot, however, leave this painful subject without very reluctantly calling attention to the abandonment of Mr. Borckhardt alone high up on the mountain. It is, perhaps, the most fundamental of all the rules of mountaineering that a party ought never to separate, unless, of course, one of its members be already dead. Separation almost necessarily means death to the man left behind. We can only suppose that Mr. Davies was too exhausted and anxious to realise the almost inevitable result of acceding to the advice given by the guides that he should push on with them, thus abandoning the weakest member of the party while still alive. No doubt the party were actuated by the very best motives in leaving their companion so as to bring help to him sooner, but in judging of the course they adopted we must bear in mind three facts. First, it is scarcely credible that they were ignorant that a man in Mr. Borckhardt's state, still alive but utterly exhausted and nearly frozen, could not possibly be left in such a position in the snow that he would be comfortable enough to await the return of his friends. Secondly, hearing shouts, and rightly conjecturing them to proceed from a search party, a man of any experience in the mountains would have remained in the same

place, so as to direct the helpers by means of answering shouts to the exact spot where the party in distress was to be found. Thirdly, their position on the mountain being pretty accurately known, it was an utter mistake to suppose that they could hasten the movements of the relief party by descending to meet them, seeing that the all-important matter was to bring succour to Mr. Borckhardt, who was too helpless to move. We are therefore reluctantly forced to the conclusion that Mr. Davies and his two guides committed an error in abandoning their companion, which it is difficult to condemn too severely. Not merely did they violate a rule hitherto always scrupulously observed by climbers, but they acted deliberately with an unfortunate want of judgment. The blunder was a very grave—indeed, a fatal one. One's thoughts revert naturally to the abandonment of M. Fedchenko, on September 14, 1873, at the foot of the séracs of the Col du Géant by his two Chamonix guides,* an act which met at the time with universal condemnation. But M. Fedchenko had already fallen into the fatal sleep from which it is all but impossible to awake a man, while Mr. Borckhardt was still alive and conscious. Mr. Davies and his guides were placed in a very difficult position, but we are strongly of opinion that they took the very worst way out of it that could have been found. It appears to us, further, matter for regret that Monsieur de Falkner's guides so easily satisfied themselves of the safety of Mr. Davies' party on the morning of August 18.

Since the foregoing remarks were in type the Editor has received the following important communication from Messrs. King and Wills. The additional information which it conveys does not render easier the task of pronouncing a calm judgment on the conduct of Mr. Davies' guides, but it does not seem to afford any ground for a more favourable opinion than that expressed above.

To the Editor of the 'Alpine Journal.'

DEAR SIR,—We think that a few remarks from us may be a useful addition to the information which you already possess with regard to the sad accident on the Matterhorn. In the first place we would like to call your attention to the fact that no information whatever reached the Monte Rosa hôtel from the gentleman or his guides, who successfully made the ascent of the Matterhorn on the Tuesday, and arrived at Zermatt the same night. The first party down raised no alarm, and all of us at the Hôtel Monte Rosa were in ignorance that there were other parties on the mountain at all. This appears to us the first matter for regret in connection with this lamentable affair.

The first party that met Mr. Davies were two guides, alone, without ropes, who met him close to the old hut. As we all know there is an excellent rope attached to the rocks at that place. Mr. Davies was of

* *Alpine Journal*, vol. vi. pp. 306-15, 372-79.

course roped to his own guides, and the guides he met very rightly refused to go farther without a rope, although Mr. Davies offered them 100 francs each if they would. Mr. Davies and his guides, however, never thought of stopping at the old hut whilst they lent their rope to the two guides, nor did anyone think of the fixed rope close by on the rocks. In consequence the guides turned back with Mr. Davies and much precious time was lost.

Mr. Davies, before reaching the new hut, met Mr. King and his guides, and then Mr. Wills, Mr. Lorria, and others. Mr. Davies had told Mr. King (who, being naturally surprised at seeing him alone, had enquired pointedly as to the condition in which his friend had been left) that Mr. Borckhardt was all right, that he needed a change of underclothes, brandy, and blankets, but there was no cause for great anxiety. The guides confirmed this and stated that when they left Mr. Borckhardt he was 'vollständig lebendig.' From what they were told neither Mr. King nor his guides had the slightest doubt as to finding Mr. Borckhardt alive when they left Mr. Davies and pressed on.

Mr. Wills and Mr. Lorria followed Mr. Davies down to the new hut, and waited there in case they should be wanted towards nightfall. Mr. Wills had leisure to question Mr. Davies at length. Mr. Davies said there was not the least cause for anxiety. 'Don't be alarmed,' he said; 'Borckhardt, I assure you, is one of my dearest friends, and I should not have left him alone up there had there been any danger. We left him perfectly comfortable; they are sure to bring him down soon.' Mr. Davies actually made a bed in the hut ready for his friend's arrival, as if his safe arrival was certain.

Mr. Davies, though shaken and tired, was not frost-bitten, and was carefully attending to the changing of his own clothes, having finished which, he began to write an account of the accident to his own sister.

The guides showed Mr. Wills the frost-bites on their fingers, which were few and trifling, scarcely worth mentioning. They contradicted themselves as to the time when they left Mr. Borckhardt, whether it was before or after the shouts were heard from the rescuing party below. They were asked whether Mr. Borckhardt during the morning was able to walk, and they said, 'Yes, he could walk, but not well; he would fall or sit down after going some yards.' Could they have *made* him walk? 'Yes, they thought so.' They were further asked if they could have got him down *alone*; they said, 'Yes, perhaps.' Then why did they not try? They said, 'Because the two gentlemen refused to be separated.' Could they have got them down both together? 'No,' they said, 'because they might have both slipped at the same time.'

When the news that Mr. Borckhardt was dead arrived at the new hut Aufdemblatten was not there; he had gone down towards Zermatt, and he first heard of Mr. Borckhardt's death from Messrs. Wills and Lorria, who overtook him. He refused to believe the news. 'It is not possible,' he said: 'I cannot believe it; we left him so well.' Then, realising the truth, he added, 'Well, it is not my fault.'

All these statements are in direct opposition to the story afterwards

sworn to at the inquest. The guides then said they did not leave Mr. Borckhardt until they had despaired of resuscitating him; that he had been unconscious, and had not spoken for two hours, and was quite stiff and motionless and beyond hope.

One more comment. M. de Falkner and his son, with three guides, passed the night within a few hundred yards of Mr. Davies and Mr. Borckhardt. Old Maquignaz, his chief guide, had twice before passed the night out above the old hut and knew the dangers. Why did not they, after bringing their party to anchor, go back and help the others down to the same place, so that they might all pass the night together? or, if this were not possible, at any rate in the morning before starting down themselves? In the morning they heard Aufdemblatten shouting that he could not move his party. Surely after conducting M. de Falkner and his son down to the old hut, where, as they lighted a fire with the door and other fragments of wood, their 'Herren' were warm and sheltered, the three guides should have returned to help Aufdemblatten in his difficulties. Instead of that they only sent young Maquignaz on alone to hurry up help, considering this was the best they could do for the party behind. In this connection it should be remembered that the 'Moseley's Platte,' where Mr. Davies and Mr. Borckhardt were lying, is not more than an hour above the old hut, or an hour and a half at the very outside, even in the weather then prevailing. In good weather the descent from the 'Moseley's Platte' to the hut does not occupy more than twenty minutes.

Madame Seiler, we may add, discussing the matter with Mr. Wills, chiefly regretted two things:—

First, and principally, that no alarm was raised at Zermatt in the evening by the first party that got down.

Secondly, the want of resource shown by Mr. Davies' guides (for example, the difficulty made about finding a rope for the first two guides whom they met).

We are, dear Sir, yours faithfully,

H. S. KING,

J. T. WILLS.

OTHER ALPINE ACCIDENTS IN 1886.

WE are enabled to lay before our readers a full account of the Gross Glockner accident (hurriedly described in our August number), almost entirely taken from the detailed narrative given in No. 196 of the 'Oesterreichische Alpenzeitung' by Herr Julius Meurer, a personal friend of M. de Pallavicini and the leader of one of the search parties.

From the highest summit of the Gross Glockner (3,797 mètres) the ridge falls to the N.W. down to the Untere Glocknerscharte, and rises again to the peak of the Glocknerwand or Hoffmannsspitze (3,730 mètres). The Glocknerwand was ascended on August 25, 1869, by Herr Karl

Hoffmann, the chief explorer of the district; but it was not till August 29, 1879, that Herr Gustav Gröger, with Christian Ranggetiner, having reached the Unt. Glocknerscharte from the W., succeeded in forcing his way to the summit of the Gross Glockner, an ascent repeated but once since (in 1884), and that again under the leadership of Ranggetiner. M. de Pallavicini had conceived the idea of ascending the Glocknerwand by the usual way, descending thence to the Unt. Glocknerscharte (a new route) and then following Herr Gröger's route up the Gross Glockner. He discussed this scheme with Herr Meurer many times in the course of the winter of 1885-6, and towards the end of June last left Vienna with the intention of trying to carry it out. The party consisted of the Marquis Alfred de Pallavicini and Herr Hermann Crommelin, the secretary of the Dutch legation in Vienna, with their guides, Christian Ranggetiner and Engelbert Rubesoier, both of Kals. On Friday, June 25, they went up from Kals to sleep at the Stüdlhütte, on the S. side of the Glockner group, and on the 26th left the hut about 6 A.M., as they were last seen alive from above Kals, about 7 A.M., on the Teischnitzkees, being then about an hour distant from the hut. M. de Pallavicini, when in Kals, had agreed to let the guides return to Kals for early mass on Sunday, June 27, but their non-appearance excited little or no attention. On June 29 the woman who acts as caretaker of the Stüdlhütte went up with her nephew to establish herself there for the summer; but they were unable to find the key in its usual hiding-place, and on forcing their way in through the window found various articles belonging to M. de Pallavicini's party scattered about, as if they had intended to return within a short time. Much alarmed, the brave woman hurried back to Kals in the rain late that night and gave information. Search parties were at once organised, but no traces could be found on either the Kals (or W.) side or on the Pasterze (or E.) side of the Glockner, save a few tracks on the Teischnitzkees, at the point where they had been seen on June 26. News of all this did not reach Vienna till July 3, and next day Herr Meurer, with several members of the Pallavicini family, started for Kals. Bad weather greatly hindered the search parties, but on July 7 Herr Meurer, with Rubesoier's brother and another man, started from the Stüdlhütte and climbed up to the N.W. ridge of the Glocknerwand, as he was aware of M. de Pallavicini's intended ascent by that route. As he reached it he found, overhanging the other or E. side, a huge cornice, skirting which he examined the precipice falling E. to the Glocknerkaar glacier, a steep and crevassed glacier lying in the hollow between the Glocknerwand and the Gross Glockner, and flowing down to the Pasterze glacier. 200 mètres of sheer rock are succeeded by very steep snow slopes for 150 mètres and a great bergschrund, whence another slope of 50 mètres leads down to the level of the glacier. All their search was unsuccessful, but the same day a party of Kals men, after many hours' search and sounding with poles, discovered Rubesoier's body on the Glocknerkaar, buried under a snow avalanche. In a straight line about 1,500 feet above this spot the cornice on the N.W. ridge of the Glocknerwand was seen to be broken away. Herr Meurer went to the spot on July 10, and after

many hours' sounding Ranggetiner's body was found buried in the débris of the avalanche. His watch had stopped at 8.35 A.M., doubtless the hour of the accident, but, as the rope was still tied round his body, digging was at once resumed in the direction to which it pointed. In a quarter of an hour Herr Crommelin's body was uncovered. All the bodies were greatly disfigured, and from the position in which they were found Herr Meurer conjectures that they fell through the cornice on to the rock precipices, whence falling on to the steep snow slopes they loosened the snow and were carried over the bergschrund and buried in the vast mass of fresh snow which had come down with them. All attempts to find M. de Pallavicini's body failed until Monday, July 12, when it was discovered (by a party of Heiligenblut men) also on the Glocknerkaar, but half an hour farther south, or nearer the Gross Glockner. It was in a sitting attitude, leaning back, the arms extended, the feet hanging over the edge of a great crevasse, and covered with a thin layer of snow. To account for the fact that M. de Pallavicini was found so far from Rubesoier, with whom he had been tied by the rope, Herr Meurer conjectures that his unfortunate friend was not killed by the fall, but only stunned and mortally wounded. On recovering consciousness he may have tried to force his way through the tangled icefall, fallen exhausted through loss of blood and passed away quietly in a swoon. The bodies were brought down to Heiligenblut, and laid to rest in the churchyard there on July 13 and 14 in the presence of a sorrowing crowd. M. de Pallavicini was just 38 years of age, a very enthusiastic and experienced climber, and a member of the Alpine Club. He had made in 1878 (with Herr J. Meurer) the first ascent of the Pala di San Martino and in 1876 the only ascent of the Gross Glockner yet accomplished direct from the Pasterze glacier by the great ice couloir. Herr Crommelin was only 28, a rising diplomatist, and of some experience in climbing.

The two guides ranked among the best in the Tyrol. Ranggetiner was 53 years of age; he made the first passage of the Silbersattel of Monte Rosa, and in 1885 had several ribs and an arm broken by a falling stone when ascending Monte Rosa from Macugnaga with a single traveller. He had quite recovered from this mishap, though he is stated to have received other injuries on earlier ascents. Rubesoier was 43 years old and a chosen comrade of Ranggetiner on difficult expeditions. He had taken part in 1884 in the second ascent of the Gross Glockner from the Unt. Glocknerscharte. Ranggetiner leaves behind him a wife and three children, Rubesoier a mother over 80 years of age. The Pallavicini and Crommelin families have settled annuities on these poor women, and a considerable sum has been collected for them in Austria.

It seems pretty clear that the party did not intend to attempt the ascent that day, but had gone out to make a reconnaissance. The fact that they started at so late an hour, that the key of the Stüdlhütte was found on Ranggetiner's body, and that most of their provisions and their luggage were left in the hut, though their idea had been to descend to Heiligenblut, point to their intention of returning to the hut that night in order to try the ascent next day.

If, as seems most probable, this accident was due to the breaking of a snow cornice, it is one more convincing proof that the utmost skill and experience—and three at least of the party had very special experience on the Glockner—do not justify men in failing to observe ceaseless caution with regard to corniches. Such carelessness generally has terrible results, and we learn once more that it is better to be too careful and cautious in suspecting corniches than not to be cautious and careful enough.

The only other notable accident in the High Alps last summer took place on the way up the Schreckhorn. About 3 A.M. on August 28 two parties left the Schwarzenegg hut to attempt the ascent of that peak—Mr. T. P. H. Jose with Emile Rey and Johann Anderegg, and Herr Max Munz, a brewer residing in Stuttgart, with Gottlieb Meyer (the younger) and Christian Gertsch. It is well known that soon after leaving the hut it is necessary to ascend a snow couloir in order to gain the right bank of the Schreckfirn.* The climbers were engaged in mounting this couloir by the usual route, when, about 1½ hr. from the hut and before daylight had come, Mr. Jose's party (which was some way ahead) heard a roar as of something falling from above, and called out to the other party. A great mass of frozen snow (not ice) rushed down from the rocks above the right bank of the couloir and struck Herr Munz's party, which had not yet put the rope on and had reached the point at which the couloir narrows considerably. After the roar of the avalanche had ceased, Gertsch answered the shouts, and Mr. Jose and his guides at once returned. Gertsch was sent down the couloir with Anderegg to look for Herr Munz's body, which it was supposed had been carried down by the avalanche. Anderegg returned, saying that it was not there, and it was only after considerable search by Rey (to whom the greatest credit is due for his conduct throughout the day) that it was discovered jammed against the rocks: the skull had been shattered and death had evidently been instantaneous. Gertsch (the leader) had two ribs broken; Meyer was carried down to the hut with a terrible wound in his head. Anderegg was despatched for assistance to Grindelwald, and a large party (including Herr Strasser, the Pfarrer of Grindelwald, and Herr Tobler, the village doctor) reached the hut at 4 P.M. the same day. Herr Munz's body was carried down to Grindelwald in the course of the night. Meyer was left in the hut under the care of the doctor and twelve men; he was carried down to the valley next day (Sunday, August 29), but never recovered consciousness and died at 3 P.M. that afternoon. Meyer was about 30 years of age and unmarried; he was one of the best among the younger Grindelwald guides. We are glad to learn that Gertsch (who is married and has a family) is now on the highroad to recovery. A subscription list has been opened for the benefit of the relations of the guides; and Sir Francis O. Adams, K.C.M.G., H.B.M.'s minister at Bern, Herr Strasser, and Herr Fritz Boss have

* A view of it will be found in the illustration to Mr. Stafford Anderson's paper in the *Alpine Journal*, vol. xi. p. 437.

consented to act as a committee for the distribution of the amount collected.

It is almost needless to point out that the spot where the accident took place has hitherto been considered quite free from danger, and has been traversed safely by very many climbers. No blame can attach to any member of Herr Munz's party for this most unfortunate mishap, which could not possibly have been foreseen and was the purest mischance.

Several accidents below the snow line are also reported.

On July 26 Fräulein Pauline Sonklar (daughter of the recently deceased celebrated orographer), with a number of friends, was crossing the Goldzechscharte to Heiligenblut, when during the descent from the Seebühelhaus to the Gaisrücke (a rocky point) she stepped on a slippery rock in the path while gathering edelweiss, and fell about 100 mètres into the narrow gorge through which the stream of the Klein Fleissthäl flows. The guide and her companions (of whom one was a medical man) went at once to her aid, but she was already dead.

A young man, also gathering edelweiss, was killed on the Niesen, near Thun.

On August 15 Herr Adolf Migotti, Professor Extraordinary of Mathematics in the University of Czernowitz (Galicia), lost his life in the following way. Together with Herren L. Purtscheller and Reichl he left at 4.30 A.M. the Leipzigerhütte, at the head of the Val di Genova, to cross the Cergen Pass. About an hour later the party were crossing some grass slopes on the left side of Monte Zigolo, traversed by sheep tracks, when they came (on the right) to a rocky chimney, the edge of which was hidden by overhanging Alpenrosen bushes. The first of the party kept to the left, in order to turn the gully, but Herr Migotti went towards it, the third man being some way behind. A moment later his companions were startled by the sound of something falling, and found that he had fallen into the gully, having slipped on a rock or trodden on a projecting bush. Unluckily his forehead had struck against a stone and he had been killed at once, though falling only about 150 steps into the gully (4 to 9 feet wide and of a slope of 40°), which was ascended with ease by his friends searching for him. The body was carried down to Pinzolo and buried in the graveyard of the ancient church of San Vigilio. Herr Migotti, who was in his 36th year, had abandoned his profession as a railway engineer to devote himself to the study of mathematics, for which he had an absorbing passion. He was accustomed to go alone in the mountains, of which he had climbed many, among others the Adamello, without any companion. It is stated that the expedition on which he perished was the first he had undertaken with anyone other than a guide.

A young English traveller, Mr. Arthur Molyneux Royds, mysteriously disappeared at the Basel railway station on the evening of August 2, and has not yet (up to the moment of writing) been found. A wild rumour was circulated that he had been seen on August 8 at or near the Reuschalp, on the E. side of the Oldenhorn, with a guide named Cotterand, of Ormonts Dessus, to whom he was reported to have entrusted 7,000 francs, but is without the slightest foundation. Mr. Royds is known to have had very little money in his possession when

he disappeared, and the traveller who was with Cotterand has been traced to Sion and Evolena at a later date, the story as to the 7,000 francs being a myth.

It is with regret that we have to announce the death of a member of the Club, Mr. W. G. Hutchinson, not indeed on a high mountain, but possibly in consequence of over-exerting and overstraining himself on several ascents. We are indebted to Mr. R. J. Cust, another member of the Club, for the following details of this melancholy event:—

‘On September 2 last Mr. W. G. Hutchinson, a member of the Alpine Club, died at Arolla under the following melancholy circumstances. Mr. Hutchinson, who resided at La Tour de Peilz, near Vevey, left his home on Friday, August 27, for a fortnight’s tour in the mountains, his intention being to visit the Val de Bagne and to proceed thence by Arolla and over the Col d’Hérens to Zermatt. On arriving at Chable, in the Val de Bagne, he engaged two guides of the district and ascended three high mountains—Mont Pleureur, Mont Avril, and the Grand Tavé—in three successive days, making the last ascent in an unusually short time and returning on Tuesday evening to Mauvoisin. Up to this time he appears to have been in good health, but on Tuesday evening, after returning from the Grand Tavé, he complained of pain, which he attributed to indigestion; but he nevertheless determined to carry out his projects, and on Wednesday morning he started at 4 A.M. with his guides on his way to Arolla by the Col de Mont Rouge, an expedition taking generally about 10 hours to accomplish. He appears to have ascended the steep slopes leading to the Col de Mont Rouge and to have crossed the snowfield leading to the Col de Seilon with great rapidity and without showing any sign of weakness; but shortly after he had passed the Col de Seilon, and while he was descending the névé of the Glacier de Seilon, he suddenly complained of violent pain in the abdomen and threw himself on the snow, refusing to move. He remained in this position for three-quarters of an hour, notwithstanding the remonstrances of his guides, who ultimately succeeded in dragging him by force down to the end of the glacier and up the rocky ledge known as the Pas de Chèvres, which leads into the valley of Arolla. On arriving at the summit of the pass he lay down on the grass, still in great pain, and was found in this condition by Mr. Davis, an English tourist, who gave him some brandy and offered assistance, but was assured by Mr. Hutchinson that the attack was only temporary and that he would soon be able to resume his journey. Shortly afterwards M. Freundler and M. Briquet, of Geneva, two eminent members of the Swiss Alpine Club, who had left Mauvoisin that morning about the same time as Mr. Hutchinson, but had gone at a more leisurely pace, arrived on the scene with two guides, and finding Mr. Hutchinson incapable of walking, carried him down into the valley, and thence to the hôtel at Arolla, where they arrived at about 5.30 P.M. Here Professor Huxley, who was fortunately staying at the hôtel, took charge of the patient, caused him to be carried up-

stairs and put to bed, and administered such remedies as were available; but in spite of the unremitting attentions of Professor Huxley and Mrs. Huxley, aided by some other ladies in the hôtel, the condition of the patient grew rapidly worse, and he died at 7 A.M. on Thursday morning, the immediate cause of death being probably acute pleurisy, brought on by over-exertion. Intimation of the sad event was telegraphed to his family, and on the following day his body was removed to Vevey for interment. Mr. Hutchinson was apparently a strong and healthy man, and was an ardent mountaineer, but the expeditions which he had made in such rapid succession were probably too much for his strength and brought on the disease which led to such a fatal termination.'

NEW EXPEDITIONS IN 1886.

[The expeditions recorded in the following pages are believed to have been made for the first time by English or foreign mountaineers. In cases where foreign climbers have preceded English travellers, reference to the original accounts have, as far as possible, been given.]

Central Caucasus.

TETNULD TAU. *August 27.*—Messrs. C. T. Dent and W. F. Donkin, with the guides Alexander Burgener and Basil Andenmatten, of Saas, started at 4 A.M. from a camp at the height of about 10,000 feet to make the first ascent of this peak. The route chosen lay by the left side of the Bezingi Glacier, and then across the snow-fields descending from the Adine Col to the western ridge of Tetnuld Tau. Principally by this ridge the summit was reached at 2.15 P.M., the ascent having been made without any great difficulty. The descent, however, from various causes proved to be rather exciting and eventful, and the party did not reach their camp till past midnight. The weather was unfavourable. The height of the mountain was estimated at 16,550 feet. It should be noted that the peak ascended is not that described by Mr. Freshfield ('The Central Caucasus and Bashan,' p. 312) under the name of Tau Tötönal. It is the peak described by Mr. Grove ('The Frosty Caucasus,' p. 135) under the name of Tau Tetnuld. It is hoped that a rough map may be constructed from observations taken, which will clear up some points in the topography of this part of the mountain chain.

In addition to the above Messrs. Donkin and Dent succeeded in partially exploring the great Koschtan-Tau group. The weather was almost constantly bad, but several excursions of great interest were made during an encampment of nine days by the glaciers at the head of the Bezingi valley.

The Russian official map (10-verst) is very misleading in its delineation of the glaciers and mountains, and the region offers a fine field for the orographer. It is almost impossible to imagine grander mountain scenery than is shown everywhere in this district.

Dauphiné District.

PIC DES OPILLOUS (3,506 mètres = 11,503 feet). August 11.—The Rev. W. A. B. Coolidge, with young Christian Almer, having reached (6¼ hours) this peak from Le Clot en Val Godemar by a route nearly the same as that taken by Messrs. Gardiner and Pilkington in 1878,* but passing the great tower on the Val Godemar side, discovered a new and very easy route down. Retracing their steps for a few minutes to the W. base of the tower, they descended easy rocks to the great snow couloir on the S.W. flank of the peak. This couloir offered no difficulties (though if it should be ice the rocks on one or other side may be climbed), and by it the moraine on the right bank of the glacier coming from the Col du Sellar was gained (below the rocky barrier, down which the track of the col descends) in only 1¼ hr. from the summit of the peak, Le Clot being regained in 1 hr. 20 min., or only 2 hrs. 35 min. from the top.

PIC DU CLAPIER DU PEYRON (3,172 mètres = 10,407 feet). August 23.—The same party made the first ascent of this peak. Starting from Valsenestre, they followed the route to the Col de la Muzelle for about two hours to near the foot of the last steep ascent up black shale to the col. Then, leaving the knapsacks, they struck up to N.W. by slopes of stones, so as to gain the little névé field at the S.E. foot of the peak (1 hr. 10 min.). Then mounting smooth rocks on the right bank of the rocky couloir on the face of the peak, they took to the couloir itself higher up, and by broken rocks gained the S.W. arête of the peak (55 min.), which was followed to the highest point, a lower summit being crossed on the way (15 min., or 2 hrs. 20 min. in all). Dense clouds hid the view, which ought to be very fine.

The knapsacks were regained by the same route in 1 hr. 35 min., the Col de la Muzelle in 50 min., and Venosc in 2 hrs. 10 min. more.

Tarentaise District.

POINTE DU VALLONET (3,343 mètres = 10,968 feet). SOUTH PEAK OF THE GRAND BEC. August 29.—Mr. Coolidge, with young Christian Almer, starting from Pralognan, followed the path to the Col de la Vanoise till, in 1 hr. 40 min. (25 min. from the Glière chalets), after crossing the stream, they struck up to the left and gained by grass slopes a cairn on a grassy promontory (25 min.). Descending on to an old lake bed, they mounted by the moraine to the small unnamed glacier shown on the French map between the Creux Noir and the Vallonet, and crossed it to its N. end (½ hr.). They then ascended slopes of *débris* and broken rocks on the left bank of the great snow gully to the snow ridge E. of the Vallonet (1 hr. 25 min.), which was utilised as a col to the Val de Champagny by MM. Puiseux and E. Michelin on September 8, 1884.† Thence, by following the ridge to the W. and the steep broken rocks of the N.E. face of the peak, the Vallonet was gained in about half an hour (4½ hrs. from Pralognan).

* *Alpine Journal*, vol. ix. pp. 90, 226.

† *Annuaire du C. A. F.* 1884, pp. 22-7.

They then climbed to the N. along the jagged ridge to the cairn on the southern peak of the Grand Bec (10 min.), which is considerably higher than the Vallonet. The ridge leading to the N. and higher peak is very long and serrated, but time did not allow the party to try it, and they regained the Vanoise path by their former route (descending the snow gully) in 1 hr. 50 min., crossing the pass to Entre deux Eaux that evening.

The S. point of the Grand Bec was first ascended by M. A. Guyard, on September 19, 1878, from the Vuzelle pastures.* It was ascended by the route described above (as well as the Vallonet) by M. Pierre Puiseux alone, on August 2, 1879.† The N. and highest peak of the Grand Bec (3,420 mètres) has hitherto been reached only by M. Ed. Rochat, on August 25, 1879, from the Val de Prémou by way of the Becca Motta glacier on the E. side. The arête between the two summits has not yet been forced. The Vallonet is the meeting-point of three great ridges.‡

POINTE DE LA SANA (3,450 mètres = 11,319 feet). COL DES ROCHES (c. 3,030 mètres = 9,941 feet). August 30.—The same party, starting from the little chalet inn at Entre deux Eaux, mounted the Vallon de la Rocheure § for about two hours till opposite the Fontaine Gaillarde. Then bearing to the N.E. over grass slopes they gained a wide grassy shelf S. of the peak ($\frac{1}{2}$ hr). Continuing in the same direction for 40 min., till overlooking the stream coming from La Barme de l'Ours, they climbed up over loose rocks to the glacier on the S.E. shoulder of the peak, which was crossed to the shaly E. ridge, by which the great engineers' cairn on the summit was easily gained in 1 hr. 25 min. (4 hrs. 35 min. from Entre deux Eaux). There is no finer point of view for all the peaks of the Tarentaise or Western Graians, though it seems only once previously to have been visited by travellers, viz. MM. Puiseux and Boutan, on August 18, 1877,|| who gained the glacier from La Val by the Glacier de la Barme de l'Ours, and descended to Entre deux Eaux. The peak is accessible (though it would be harder) from the side of the Vallon de la Leisse.

Returning in 22 minutes to the ridge overlooking the Barme de l'Ours stream, they descended to that stream, and made a traverse over grass and shale, always on the La Rocheure side of the ridge, to the S.W. foot of the Pointe du Pisset (3,046 mètres—50 min.), rounding which they gained in 20 minutes more, by snow and shale, the crest E. of that peak, which is the edge of the considerable Glacier des Fours and overlooks a glacier lake. They then crossed both branches of this glacier, bearing nearly due E. round the N. foot of the Pointe de Méanmartin (3,337 mètres), and finally steering N.E. up a bank of shale reached the ridge between the Signal de Méanmartin (3,326 mètres) and the Pointe des Roches (3,071 mètres), nearer the latter (1 hr.). This point may be called the Col des Roches. In a few

* *Annuaire du C. A. F.* 1878, p. 203-7.

† *Ibid.* 1879, pp. 112-14.

‡ *Ibid.* 1879, pp. 81-2.

§ See *Alpine Journal*, vol. ix. p. 99.

|| *Bulletin du C. A. F.* 1877, p. 317.

minutes they rejoined their old route up the Méanmartin,* by which Bonneval, at the head of the Arc valley, was gained in 1 hr. 20 min. from the col.

By this new pass it is now rendered possible to take the Méanmartin or the Sana on the way to Entre deux Eaux or the upper valley of Tignes. The Glacier des Fours splits into two branches, flowing into two different gorges, which unite lower down at Le Manchet.

Graian District.

AIGUILLE PERS (3,451 mètres = 11,323 feet). August 31.—The same party, starting from Bonneval, followed the path of the Col d'Iseran for 2½ hrs. to the base of the final ascent, whence bearing N. to the Lac de Céma (20 min.) they crossed the stream, and mounting over shale took to the Glacier du Grand Pissailas at the point marked 2,923 mètres (35 min.). Thirty-five minutes more across the easy glacier brought them to the foot of the peak, which was climbed by the broken rocks (in part a natural staircase) of the S.E. face and S. ridge in 20 min. (4.5 from Bonneval). The view was exceedingly fine, as the peak is the highest in the immediate neighbourhood of the Col d'Iseran, though the name Aiguille Pers is on the map given to a lower summit to the N. All the Graians were seen, as well as the Mont Blanc and Monte Rosa ranges. Regaining the glacier at the foot of the peak in 7 min., the party then traversed it to the N.W. to the Col Pers (3,015 mètres—25 min.), whence by the steep though broken rocks of the E. arête the great cairn (with date 1862) on the Mont Iseran (3,241 mètres = 10,634 feet) was gained (¾ hr.). The view was inferior to that enjoyed from the Aiguille Pers. In 35 min. the Lac de Céma was reached by the rather jagged S. ridge of the peak and a débris couloir. In 25 min. more the party attained the ridge of the Col d'Iseran, rather N.E. of the hut on the summit, and descended to La Val in 1. hr. 20 min. more.

The first and apparently only previous ascent of the Aiguille Pers was made by M. Ed. Rochat on July 31, 1878, by the S. ridge.† The Mont Iseran was reached on Sept. 12, 1860, by the late Mr. J. J. Cowell, probably by the easy shaly W. face from the col,‡ though several later attempts of English climbers have been defeated by bad weather.§

PUNTA DI GALISIA (3,345 mètres = 10,975 feet, New Italian Survey), POINTE DU BOUSSON of A. C. map (10,945 feet). Sept. 1.—The same party, starting from La Val, ascended this peak—the meeting-point of three ridges and the highest summit near the Passo di Galisia—by the route taken on August 17, 1878, by Mr. Yeld's party on the descent|| (4¾ hrs.). Returning to the great snow plateau, they then bore round to the left of a rock hump in the glacier (which from below has the air

* *Alpine Journal*, vol. xi. p. 357.

† *Annuaire du C. A. F.* 1878, pp. 164–70.

‡ *Vacation Tourists*, 1860, pp. 261–2.

§ *Alpine Journal*, vol. ii. p. 81, vol. iii. p. 110.

|| *Ibid.* vol. ix. pp. 100, 480. Mr. Yeld's card was the only one found in the cairn.

of a distinct peak), and keeping to the right of some rocks (E. of the Rocca Bassagne of the Italian map) with glacier débris below, descended through crevasses to the plateau of the great Ghiacciaio del Fonte, which fills all the S.E. corner of the Val de Rhêmes ($\frac{1}{2}$ hr.). The moraine was gained in about 35 min. more. Thence keeping to the left of the main stream grassy alps were traversed and several groups of huts passed. The right bank of the stream was gained in 50 min. near Lavessey by a well-built stone bridge (opposite to but much lower than La Suche), and the path followed to the hamlet of Notre Dame de Rhêmes ($1\frac{3}{4}$ hr.), where the curé showed his usual abundant hospitality. It is believed that this is the first time that this great glacier has been traversed in its whole length by travellers, though several parties have been on the glaciers farther W., which are hardly joined to the Gh. del Fonte.* At the top of the moraine many relics were found of some hunter or herdsman who had perished in the glacier.

M. ORMELUNE (3,278 mètres = 10,755 feet, new Italian map), POINTE DE L'ARCHEBOC (3,283 mètres = 10,772 feet, French map). *Sept. 3.*—The same party, starting from Fornet, at the head of the Val Grisanche (where Bois, the King's gamekeeper, has fitted up two little rooms and entertains visitors very fairly), followed the Col du Mont track for rather over one hour, and then bore S.W. up grass and rock slopes, finally gaining the great glacier E. of the peak near the point marked in the Italian map 2,980 mètres (1 hr. 50 min.). An easy traverse to the W. across the glacier led to the N. arête of the peak (20 min.), which was followed to the top (22 min.), reached in 3 hrs. 37 min. from Fornet—very quick walking, as bad weather had delayed the start till about 9 A.M. A great cairn has been built by the engineers on the French side. The great feature of the very fine view was the Pourri. The return to Fornet by the same route, profiting by snow patches, took only $1\frac{3}{4}$ hr. There was an enormous quantity of fresh snow on the mountain. The peak may be easily climbed on the French side from Le Monal. It seems to have hitherto remained unvisited by travellers, though as long ago as July 29, 1865, Mr. R. C. Nichols reached the S. and lower point of the mountain from the side of the Col Vaudet on the S.†

MONTE NERO (of the New Italian Survey) (3,331 mètres = 10,929 feet), BECCO DELLE ROCCIE NERE (Baretti) in the Panorama of the group of the Grand Paradis taken from the Col della Croce dell'Intror by Signor Balduino (Bollettino C. A. I. for 1878, No. 35). *August 10.*—Professor Martino Baretti, with the guide Augusto Sibille, of Chiomonte, and the porters Tarro Tomà Giacomo and Antonio Sacchi, left the highest Muanda of Teleccio at 5 A.M., and mounted obliquely the rocks of the Agnelere inferior on the left of the torrent which descends from the glaciers of the Roccie Vive. At 7 the party was at the foot of the southern face of the Monte Nero. They then turned to the left among the clappeys, and at 8.30 reached by a

* *Annuaire du C. A. F.* 1876, pp. 199-200; 1878, pp. 213-16. *Alpine Journal*, vol. ix. pp. 101, 481-82.

† *Alpine Journal*, vol. ii. pp. 207, 389.

steep couloir the gap between Monte Nero and the Testa di Monei of Mr. Yeld's map,* to which the name of Colle San Lorenzo (c. 3,150 mètres) was given. Continuing to mount by dangerous and broken rocks towards the S., at 9.30 they gained the crest beneath the summit, the latter being formed of three formidable teeth. Finding that it was impossible to ascend on this side, they descended to about the middle of the ridge, gained the western face, which looks down on the glacier of the Rosse Vive, and traversed it by broken but not dangerous rocks to near the crest which divides the southern from the western face. They then mounted by a gully, which brought them to a wall of rock 40 mètres high and almost vertical, whence by a chimney in the rocks they gained the base of the last and highest tooth overlooking the southern face, and at 12.30 they commenced building a stoneman on the summit. At 1.30 P.M. they left the summit and descended by most dangerous rocks, passing along the side of the crest between the southern and western faces. They then left the crest, and descended by a very steep couloir to the western extremity of the southern face. At 5 P.M. they regained the foot of the peak, and at 6.30 the Muanda of Teleccio. The peak from its central position commands a most magnificent view of the cirque of Teleccio. There was no trace of any preceding ascent. The last part of the ascent is very difficult, and the way chosen for the descent is not to be recommended, but it is best not to return to the Colle San Lorenzo.

Bernese Oberland.

GROSS GRÜNHORN (4,047 mètres = 13,278 feet). *July 3.*—The Rev. W. A. B. Coolidge, with young Christian Almer and his brother Rudolf, starting from the Bergli hut, crossed the Mönchjoch and descended the Ewigschneefeld to near the W. base of the peak. Mounting the revassed glacier which descends from the hollow between the peak and the Grüneckhorn, they struck (in rather under 3 hours' slow walking from the Ewigschneefeld) the rocky S. arête of the peak a little above the depression between the Gross Grünhorn and Grüneckhorn, and followed it to the summit in 1 hr. 50 min., the enormous amount of snow greatly hindering progress. The descent by the same route took 3 hrs. The only previously recorded ascent of the peak is that made by Herr E. von Fellenberg on August 7, 1865, the route taken being that described above.†

HÜHNERSTOCK (3,348 mètres = 10,985 feet). *September 15.*—The same party, with the addition of Mr. Frederick Gardiner, made the first ascent of this peak, the highest in the Oberland E. of the Gauli Pass. Starting from the Swiss Alpine Club hut near the old Pavillon Dolfuss, they ascended along the stream E. of the Kühtriften and by moraine to the W. branch of the Vorder Trift glacier (1 hr. 5 min.), which was ascended to the pass crossed by Herr G. Studer, and called

* *Alpine Journal*, vol. xii. p. 509.

† *S. A. C. Jahrbuch*, 1866, pp. 319-23; Studer's *Ueber Eis u. Schnee*, vol. ii. p. 45. *Alpine Journal*, vol. ii. p. 268.

by him Hühnerthaligrat,* lying immediately E. of the peak (35 min.). Traversing by snow-slopes to the base of the N.E. face, the rocks of that face were climbed, the party being gradually forced, in order to avoid the danger of falling stones, to the E. arête, by which the summit was finally gained (2 hrs. 40 min. from the col). The view was exceedingly fine, especially that of the Schreckhorn and Wetterhorn. No traces of any previous ascent were found on the top, where the party proceeded to build a cairn. To avoid the most difficult part of the ridge they traversed in the descent the S.W. face, then took to the ridge again and regained the col by their former route in $3\frac{1}{2}$ hrs. from the summit. 55 min. more brought them close to the Club hut, which was not visited, as the party proceeded direct to the Grimsel the same evening.

The ascent of the peak from the col was excessively difficult, the rocks being extremely rotten and in parts very smooth; hence the amount of time spent on the climb, which is only from 700 to 800 feet.

KLEIN VIESCHERHORN, OR OCHSENHORN, BY THE N. OR ZÄSENBERG ARÊTE (3,905 mètres = 12,812 feet). August 17.—Mr. J. Stafford Anderson, with Ulrich Almer and Aloys Pollinger, starting from the Schwarzenegg hut at 3.40 A.M., gained in 2 hours the N. ridge of this peak just above the Pfaffenstöckli (apparently the point called Ochsenjoch by Mr. G. E. Foster).† This ridge was followed to the summit of the peak, first up an ice-wall to the foot of some bad rocks ($1\frac{3}{4}$ hour), the climb up which took 50 minutes, thence by a steep ice and hard snow ridge requiring continuous step cutting (2 hours). On the descent, rendered difficult by a storm, the party on reaching the rocks bore round to the E., through séracs and crevasses, to the Eismeer, Grindelwald being reached at 5.50 P.M.

ZAHNLÜCKE (c. 9,800 feet). August 13.—Mr. M. Holzmann, with Rudolf Kaufmann and Kaspar Streich, reached the Geschenen Alp by a new pass across the 'Spitzberge,' known there by the name of 'Zahnlücke.' They ascended in almost a straight line from the left bank of the Reus at Hospenthal up steep grass slopes, past the Riechlerberg and Lauter See, to above the Mutzenalp, and thence over moraine, glacier, and some rocks in 3 hrs. 20 min. to a cleft in the ridge close to and north of the Mütterlishorn, and descended in a N.W. direction down the glacier, moraine, and rocky pastures in 1 hr. 20 min. to the Geschenen Alp.

DAMMAPASS (c. 11,155 feet). August 14.—The same party ascended along the torrent issuing from the Winter glacier, then by the left bank of the glacier to the glen on the S.W. slope of the Moosstock, whence they mounted over rocks, glacier, and névé to the foot of the Dammapass. There they turned to the left towards the largest snow couloir, about midway between the Dammapass and Rhonestock, reaching its foot in 4 hrs. from the Geschenen Alp. After crossing the bergschrund they cut up this exceedingly steep couloir, but finding hard ice they turned after some time to the rocks on the N. side, kept to them as much as possible, scaled finally an almost perpendicular

* *Jahrbuch d. S. A. C.* 1868-9, pp. 651-58.

† *Alpine Journal*, vol. iv. p. 155.

snow wall, and gained in 2 hrs. 10 min. the edge of the névé of the Rhone glacier at a point where part of the cornice had broken off. Clouds and a snowfall having overtaken the party whilst they were in the couloir, they had the utmost difficulty, notwithstanding the aid of map and compass, in finding their way down the Rhone glacier, and it required 4 hrs. 25 min. of slow progress to reach the Grimsel Hospice over Nägeli's Grätli. In clear weather the descent would probably have taken 1½ hr. less time. The 'Alpine Guide' (Central Alps, 144) speaks of the attempts to traverse the range of the Winterberg as unsuccessful, but the pass is indicated on the map of the Swiss Alpine Club for 1871, and is mentioned by Tschudi (p. 228, edition of 1886), although he erroneously states that it leads from Geschenen to the Tiefen glacier, whilst he correctly describes the descent to the hut on the Trift glacier. His authority is evidently the account given in the Swiss 'Jahrbuch' (vol. v. p. 280) by Herr A. Hoffmann-Burckhardt, who would seem to be the only mountaineer who had crossed the pass. The same gentleman's earlier descent from the Rhone glacier to the Damma glacier (*ibid.*, vol. iii. p. 131) was effected considerably to the N. of the route described. On the other hand, the couloirs to which Herr R. Lindt (*ibid.*, vol. v. p. 175) proposed to give the name of Dammapass are situated to the S. of the Rhonestock, and serve for the passage now known as the 'Winterjoch.'

The Dammapass, though highly interesting and offering the most direct route between Geschenen and the Grimsel, cannot be recommended to mountaineers, as the couloir is not only exposed to the fall of the gigantic cornice overhanging it, but is also swept by avalanches of stones, the track of which cannot be avoided for a considerable distance. The party had a very narrow escape, as an enormous mass of stones came down within less than a minute of their having reached some sheltering rocks, and completely obliterated the line of steps which they had been cutting during the preceding half-hour.

Monte Rosa District.

UNTER GABELHORN (3,398 mètres = 11,149 feet). *August 5.*—Messrs. H. Heldmann and Alfred Holmes, with Fridolin Kronig and Joseph Biner, left Zermatt at 5.30 A.M., and mounting the Trift glen reached the foot of a big snow couloir at about 8 A.M., their object being to mount the peak from the Trift side. Climbing up this for an hour they took to a smaller couloir on the right and climbed it to its head. A narrow gully filled with loose stones was succeeded by easy rocks which led to a sloping ledge. From this point the ascent was continued by a narrow, smooth gully in the rocks, the ascent of which occupied 1 hr. 10 min. and was very difficult. Five minutes more over easy rocks led to the summit of the peak (7 hours' walking). The descent was made by the usual route.

This route is unrecorded in these pages; the final gully may be that described in Mrs. Burnaby's 'High Life and Towers of Silence', p. 178.

OBER-MOMINGHORN (3,968 mètres = 13,019 feet). *August 16.*—Mr. H. S. King, with the guides Ambrose Lupersax and Aloys Antha-

matten, reached on the other side farthest from the peak the right-hand summit of the Moming Pass from Zermatt by the usual route. There was a considerable cornice on the Zermatt side of the pass, but the Zinal side was free. Keeping well from the cornice, they traversed the ice slope on the Zinal side, having to cut steps in hard ice the whole way. From the pass to the first rocks the party took an hour. Here they crossed over the ridge to the Zermatt side, and, keeping well below the arête, made their way to a point exactly under the first large gendarme, where there is a chimney, up which they scrambled on to the side of the gendarme farthest from the Moming Pass, climbing thence straight up on to the northern arête, which they followed to the summit, crossing over the intermediate gendarmes. The rocks here were very hard and good, but extremely difficult.

The party did not descend by the same way, but, climbing down on the southern arête under the summit, worked their way down along a band of snow, over which, by keeping close to the rock, sometimes on the snow and sometimes on the rock, they reached the bergschrund at the foot of the ice-wall which constitutes the Moming Pass and is on the extreme right hand ascending from Zermatt. The time from the first rocks struck to the summit was $3\frac{1}{4}$ hours. The descent, however, only occupied about $1\frac{1}{2}$ hour. The ascent could be made in quicker time and far easier by the route which the party took on descent, but it would not be nearly so interesting a climb.*

WELLENKUPPE FROM ZINAL (3,910 mètres = 12,829 feet). August 1, 1885.—Mr. T. P. H. Jose, with P. Knubel and his son César, left the Mountet hut on July 31 to cross to Zermatt over the ridge which joins the Gabelhorn and Wellenkuppe. After some hours' climbing up the right-hand side of the glacier which descends from this ridge (keeping near the rocks of the Gabelhorn), they found their way entirely cut off by two crevasses, invisible from below, and returned to the hut.

Starting again the next morning at 2.5, the party followed the Triftjoch route to within some 200 feet of the place at which the rocks are usually taken for that pass (3.15 A.M.). Turning then to their right, they steered in a general direction toward the peak of the Gabelhorn, three long zigzags taking them to the top of the icefall and on to a snowy plateau not far from, but on the upper side of, the crevasses which had stopped them the day before. Passing over ice *débris*, they now turned to their left, mounting always till well over a patch of rocks directly under the summit of the Wellenkuppe. They then again turned right, and followed the left side of a long line of broken ice which descends from the ridge, crossing it some way up, then turned left over the highest crevasses to the col. From the col a short snow-slope led them to the summit of the Wellenkuppe (7.45), Zermatt being reached at 11.55 A.M. by the ordinary Wellenkuppe route. This expedition would only be possible in exceptional seasons.

* The name 'Ober-Mominghorn' is given to this peak to distinguish it from the heap of rocks marked 'Morningspitze, 3,867,' on the new Federal map, between the Moming Pass and the Ober-Schallenjoch.

ULRICHSJÖCH (about 12,500 feet). *July 30.*—Messrs. G. Scriven, H. West, and W. M. Conway, with Truffer, Aloys Zurbrücken, and Joseph Knubel, left the hotel at Saas-Fee about 3.30 A.M. They followed the ordinary Nadelhorn route in $4\frac{3}{4}$ hrs. to the col between the Ulrichshorn and the Nadelhorn. There are really two cols, separated by a rock tooth. That nearest the Ulrichshorn is the lowest and pleasantest. In the descent they had to force a long ice-wall by traversing to the left; they then crossed the bergschrund, and went straight across the glacier to rocks at the foot of the Dürrenhorn ($1\frac{1}{4}$ hr. from the col). They took to them to circumvent the ice-fall for 50 min., and then they mounted a steep snow-slope in 30 min. to the Galenjoch (3,240 mètres). Thence $2\frac{1}{2}$ hours' walking to Randa.

This pass is incomparably finer than the Ried in every respect.

VARIATION OF THE RIED PASS.—Mr. Harold W. Topham last summer made an interesting variation on the Ried Pass. It takes, however, a little longer than the usual route, which is followed from Fee to the foot of the Gemshorn. Then, instead of rounding the peak to the Ried Pass, he climbed up the rocks of the face of the Gemshorn to the top of that peak ($4\frac{1}{2}$ hrs. from Fee).

SÜD LENZSPITZE FROM THE N. (4,300 mètres = 14,108 feet), AND NADELHORN FROM THE S. (4,334 mètres = 14,220 feet). *August 29.*—Mr. Harold W. Topham, with Xavier Imseng and Aloys Supersax, left the Saas-Fee hôtel at midnight, and at four reached the *schrund* at the top of the Hochbalen glacier. After waiting half an hour for daylight, the party commenced the ascent of the rocks leading up to the arête connecting the Süd Lenzspitze and the Nadelhorn. They struck the rocks which lie nearest to the great ice-slope on the Süd Lenzspitze, and then went up a ridge of rock to the left of the nearest couloir. Half an hour from the summit they bore rather to the left, and gained the arête (two hours) considerably to the right of the small gendarme (the second from the ice-slope), leaving these two gendarmes to the E. Thence they walked up the snow ridge (descending twice on the W. side) to the summit of the peak (one hour). This is Mr. Dent's route.*

After a stay of forty minutes on the top, the party retraced their steps, and climbed up the rock ridge, passing over two tall rock gendarmes, to the Nadelhorn in two hours. From the Nadelhorn they returned to Saas-Fee by the usual route, the time taken by the whole expedition being only 12 hrs. 8 min., as the snow was in splendid condition.

On August 16 Mr. Topham had been up the Süd Lenzspitze by Mr. Graham's route along the E. arête, taking no less than 14 hrs. 20 min. on the ascent, and being forced to descend to Randa after having been out $25\frac{1}{2}$ hrs. Hence when the snow is in a good state the N. ridge is to be preferred.

Some confusion prevails as to the name of the pass between the Süd Lenzspitze and the Dom. It is commonly known as the Nadeljoch; but it is more properly the Süd Lenzjoch, the true Nadeljoch (the

* *Alpine Journal*, vol. xi. pp. 388-90.

descent down the west side of which did not seem difficult) being reached by Mr. Topham on August 29.

ZUMSTEINSPITZE FROM THE GRENZSATTEL (4,578 mètres = 15,004 feet). *July 22.*—The Rev. W. A. B. Coolidge and Mr. W. M. Conway, with young Christian Almer and his brother Rudolf, reached the Grenzsattel from the Riffelalp by the route described in 'Alpine Journal,' vol. viii. p. 338. From the col they followed the easy rock and snow arête in 40 min. to the top. They found Zumstein's threefold iron cross and the initials N.V., A.V., and I.Z. carved on the highest rock. They descended by the usual route to the Lysjoch.

Lepontine Alps.

PIZZO DEL CERVENDONE, OR CHERBADUNG (3,213 mètres = 10,542 feet). *July 15.*—Rev. W. A. B. Coolidge and Mr. W. M. Conway, with young Christian Almer and his brother Rudolf, left Hôtel Ofenhorn, at Binn, at 10.30 A.M. only, as the weather cleared up late. They ascended the steep path behind Willigen, through the woods for $\frac{3}{4}$ hr. to Schlaplerstafel (1,872 mètres), and thence reached the Beschissene Matte (1,897 mètres) in 20 min. They bore left to the stream in the Fleschen valley in 25 min., and mounted the slopes of the Wannenhorn for 35 min., to a plateau at the foot of the slope leading to the col (Halbelfjoch) between the Wannenhorn and the peak, 3,108 mètres. They ascended a snow-slope in $\frac{3}{4}$ hr. to the col. Thence they circled round snow-slopes on the other side of the col for 20 min. to the rocks of a ridge on the N. side of a couloir which seams the W. face of Cherbadung. Ascending these for 40 min., they gained the snow arête by which the summit was reached in 20 min.

In the descent they went down the rocks of the W. face, and then bore left over steep snow and a few rocks, joining the main S. arête just above the second rock shoulder. A short couloir brought them to the col at the foot of the ridge in 50 min. from the top. Glissades took them in 20 min. to the foot of the Wann glacier. Thence in 10 min. down snow covering moraine, to a shoulder of rock at the head of the gorge (most to the right), down which the glacier stream flows; 15 min. down between this gorge and another on the left to a steep path, which led in 15 min. across the right-hand gorge to the flat valley, 20 min. to the Kriegalp huts, 30 min. to Heiligkreuz, $\frac{3}{4}$ hr. to the hôtel at Binn. Total, 4 hrs. 10 min. up, 3 hrs. 25 min. down.

A ruined cairn was found on the summit, but the landlord at Binn said that no ascent had been made for the last twenty years.

Tödi District.

HÖHLENSTOCK (2,908 mètres = 9,541 feet). *August 13.*—Messrs. W. Cecil Slingsby, H. A. Beeching, P. A. L. Pryor, and W. White, without guides, made the first ascent of this peak. Starting from the hôtel at Waldibalm at 2.55, they mounted by Alp Gnof and Stafel Alp to the Stafel glacier W. of the Schwarzberg at 5.50, and at 7.15 crossed the bergschrund at the S. foot of the peak. The climb up smooth limestone rocks was very difficult, first by the E., then by W.

section of the S. face. A great cavern was found some 300 or 400 feet below the summit, whence the name given to the peak. The final climb was made by the W. ridge, the summit being gained at 1.20 P.M. Leaving again at 1.35 P.M., the Stäfel glacier was cleared at 5.30 and Waldibalm regained at 7.5.

The peak stands between the Grosse Windgälle and the Gross Ruchen, and, as well as a smaller mountain to the N., is called on the new Federal map the Weiss Stöckli, a most inappropriate name for a mountain which is on all sides too steep for snow to be on it.

Bernina District.

MONTE ROSSO DI SCERSCEN FROM THE SCERSCEN GLACIER (3,967 mètres = 13,016 feet). *September 7.*—Messrs. B. Wainwright and Edmond Garwood, with Martin Schocher, of Pontresina, as guide, and a lad named Schnitzler, of Pontresina, as porter, starting from the Marinelli Hütte, ascended the Scerscen glacier to a point just below the Cresta Güzza sattel (2 hours), whence they struck up the S. face of the Rosso di Scerscen and climbed up direct to its highest point (4 hours). They then traversed the arête connecting this peak with the Bernina to the snow sattel which Mr. Williams reached on August 12, 1885, from the Tschierva glacier; * thence they followed his route as far as the snow arête leading down to the top of the Cresta Güzza sattel, and descended by this snow arête and the Bernina ice-fall to the Morteratsch glacier.

Stubai District.

WILDER FREIGER (11,253 feet). *August 10.*—Messrs. A. J. Butler and F. Pollock, with Sebastian Reinalter, of Neustift, as guide, ascended the Wilder Freiger by the usual route from Ranalt by the Langenthal and the Grübl Ferner, and descended by the following route, which, to the best of their information, is new. From a point near the upper end of the rocks on the ridge running S.E. from the rock (approximately the triangulation mark given as 3,390 mètres on the Austrian Generalstabskarte) the northernmost arm of the névé, collectively known as the Ueblertal Ferner, is reached by a short steep descent over rocks and snow, after which a bergschrund has to be passed. The way then lies somewhat S. of W., keeping well on the S. side of the rocks which form the N. boundary of the Ferner, and then for a short time over those rocks to the Pfaffennieder, the depression under and immediately E. of the Oestlicher Pfaff. Thence over the E. branch of the Sulzenau Ferner to and across the foot of the glacier, and down to the Sulzenau Alp, joining the main valley of the Unterberg at Graba, and so back to Ranalt, the route is already known, forming part of the pass from the Stubai Thal into the Passeyr Thal, first made by Messrs. R. and W. M. Pendlebury (see Ball's 'Central Tyrol,' § 49, Route F, and Meurer's 'Führer durch West-Tirol und Vorarlberg,' p. 113). This expedition, though somewhat longer than

* *Alpine Journal*, vol. xii. p. 422.

the descent by the usual route, makes an interesting variation. No particular difficulty was found in the new portion, the snow being in fairly good order and the schrund passed with little trouble. The whole time occupied from Ranalt and back was 13 hrs., including all halts. It may be worth while to call attention to the new hut erected by the Nürnberg section of the D. und Ö. A.-V. at the head of the Langenthal, which was opened on August 18, and will henceforth greatly facilitate excursions in this direction.

Norway.

August 25.—A lady sends the following note : ' From Gaard Sunde, on the Oldenvand, over the Grytereidsnibben (about 5,600 feet), along the snow-field to the Cecilien Krone, and down to Eide, near Olden. Very interesting expedition. Guide, Lars Jensen. There are now most comfortable hôtels at Olden and at Loen, on the Nordfjord.'

ALPINE NOTES.

WINTER MEETING AND DINNER.—The Winter Meeting of the Club will take place on the evening of December 14. On the afternoon of December 15 the usual Picture Exhibition will be held at Willis' Rooms, where the winter dinner will take place the same evening. Gentlemen willing to lend pictures for exhibition are requested to communicate as soon as possible with the Hon. Secretary of the Club, W. F. Donkin, Esq., 142 Sinclair Road, Hammersmith, London, W.

GUIDE BOOK TO DAUPHINÉ (xii. 524).—We learn that the publication of this book will not take place before April or May next, as the printing and engraving have been found to require a much longer time than was originally anticipated. It will, however, certainly appear in time for use next season.

THE MÖNCH FROM THE WENGERN ALP.—This expedition has not been made for seven years, despite several attempts, as the ice hump on the ridge had become so enlarged that it was impossible to force it. The following account of a successful ascent will therefore be read with great interest :—

' On September 13, at 2 A.M., Mr. W. Fairbanks and I, with our guides, Ulrich Almer and Ch. Roth, started from the Little Scheideck to complete a climb attempted a few days before. At 6.30 we reached a point on the rocks of the N.W. ridge of the Mönch (about 2,000 feet above the Guggi hut) at the foot of the ice slope running up to the steep ice wall which is the *mauvais pas* of this ascent. Here Mr. Fairbanks and I remained whilst Almer and Roth went ahead to try to complete a route worked at for three hours on our first attempt—up the extreme left end of this ice wall. Two hours' hard step-cutting failing to force this route, they were obliged to give it up. They then tried round the base of the ice cliff, with the idea of turning the difficulty by descending left on to the N. face of the mountain. This also proving useless, they returned to us at 10.30. We then decided to

attack the ice wall at a point well to the right, where the open end of a crevasse splits it almost from top to bottom. This route we had at first thought dangerous from falling ice, but having now during two days seen absolutely nothing fall we took it *faute de mieux*.

Starting together again at 11, Roth leading, we cut our way very slowly up the right side of the ice slope, then climbing a few hundred feet of rock, again came on hard ice, reaching the entrance to the base of the crevasse at 1.45 P.M. Two hours more were spent in step-cutting up the broken masses of ice which lay in the crevasse, and at 3.45 we had passed our difficulty. We estimated the height of this ice wall at 60 feet, and the entire height from our halting-place to the top of the wall about 600 feet.

From this point to the top of the mountain no further difficulty was encountered, though another but more gently inclined ice wall gave the guides further work. The top of the Mönch was reached at 6.20, just as the sun set, and the descent to the Bergli hut made in 2½ hrs. by the light of a brilliant full moon, the steps made that morning by a party ascending the ordinary way being very helpful.

‘T. P. H. JOSE.’

RECORDS LEFT ON MOUNTAIN-TOPS.—Last summer I had the luck to find a record which had been on a mountain-top even longer than that on the Gross Viescherhorn described by Mr. Wethered.* On September 2 I reached the summit of the Granta Parey from Notre Dame de Rhêmes (under five hours' walking), and in the cairn, amongst cards of later visitors, I found those of Messrs. Nichols, Blanford, and Rowsell, who made the first ascent of the peak on August 22, 1863.† A little further search brought to light Mr. Nichols's original account of the ascent, extending to about twenty or twenty-five lines and written in pencil. It was perfectly legible, with a trifling exception where one of the corners had been torn off, and on the back was written the narrative of a French gentleman who had made the second ascent on September 21, 1866. The cards and paper were not enclosed in any bottle or box, but I caused them to be carefully packed in one and put in the cairn before we left. The height of the peak is 11,395 feet.

W. A. B. COOLIDGE.

MAP OF THE GRAN SASSO D'ITALIA.—The Roman section of the Italian Alpine Club proposes to publish a map of this district in the Abruzzi, in five colours, on a scale of 1 in 80,000: inset in the large map will be one of the chief summits on a scale of 1 in 25,000. The map is based on that of the Ordnance Survey, with many corrections and additions. The subscription price is 4 francs; if mounted on linen in a case, 5f. 50c. Intending subscribers should send their names to the Sezione di Roma of the Club Alpino Italiano, Via Collegio Romano 26, Rome. A description of the highest peak of the district, from the pen of Mr. D. W. Freshfield, will be found in a previous volume of the Journal (viii. pp. 353–375).

ENGLISH CHURCH AT GRINDELWALD.—At length the English Church in this frequented mountain centre has been constructed, Mr. Luck

* *Alpine Journal*, vol. xii. p. 467. † *Ibid.* vol. i. p. 200; vol. ii. pp. 22–4.

being the architect, and was dedicated on Whitsun Day, June 13, by the Bishop of Ripon. It stands a little below the Bär, on the right-hand side of the path leading to the Wengern Alp. Its appearance is picturesque, by far the greater part of the building being in pine-wood, the attempt to reproduce architectural features in that material being decidedly original. There is still a debt on the building. The parishioners of Grindelwald have kindly lent the old and curious bell in their possession, which bears the inscription, 'O S. Petrela ora pro nobis' (*i.e.* for S. Petronella). It may be well, however, to point out that the chapel on the left bank of the Weisse Lüttschine (to which the bell is said to belong) does not seem to be mentioned earlier than 1577 (its name does not occur in the inventory of the property of the monastery of Interlaken, made at the time of the Reformation), and that the bell itself is certainly not older than the end of the fourteenth or beginning of the fifteenth century. The figures on the rim are sometimes read '1044,' not being meant, in all probability, for figures at all. See the engraving and account given by Herr Gottlieb Studer (*Jahrbuch der S.A.C.* 1879-1880, pp. 511-514).

AN EARLY ALPINE ACCIDENT.—In looking through an old number of the 'Landscape Annual' for 1830 the other day I came across mention of the death of a M. Eschur, a Danish gentleman, by a fall into a crevasse through neglecting to follow the advice of his guides. No date was given, and the accident was said to have happened on the 'Glacier of Druet.' I had never previously heard of this accident, and the name of the glacier is not familiar to me. Perhaps some member of the Club is acquainted with the particulars. In the same volume an amusing account is given of the difficulties attending the ascent of 'Mont Ventoux, one of the highest mountains of the Alps.'

W. PERCY THOMAS.

REVIEWS AND NOTICES.

GUIDE BOOKS OLD AND NEW.

Meurer's Illustrierter Führer durch Ost-Tirol, mit dem Pinzgau und den Dolomiten. (Vienna: Hartleben, 1886. 6s.)

Süd-Baiern, Tirol und Salzburg. Von K. Bädeker. 22nd edition. (Leipzig: Bädeker, 1886. 7s.)

THESE two excellent handbooks cover in part the same field, though the second is the more comprehensive. A careful comparison of the Zillerthaler section in each proves that either can be conscientiously recommended. Meurer has the advantage in type and arrangement, and is somewhat more of a mountaineer. Bädeker weighs less, and is far ahead in his maps. In this respect he has no rival among handbooks, unless the British Baddeley. Meurer gives many woodcuts, and as a whole they may be commended, though we doubt the use of illustrations in guide books. The political limitation by which Heiligenblut and the passes north from it to the Pinzgau are excluded

from his pages is practically inconvenient and might well be removed. Physical, not political, boundaries should govern guide books. Why is the Cima di Canali represented as exceedingly difficult? Mr. Tucker did not find it so. The remarkable ascent of the Pelmo is inadequately mentioned. The pace on the flat allowed for is surely funereal, '4 kil 1 Stunde Gehzeit.' Six is an ordinary pace, and five is dawdling; but nationalities differ, and foreign legs, like foreign trains, indulge often in 'Zehn-Minuten-Aufenthalt.' Toppfer held that these odd minutes made up the golden moments of life, and on the whole we agree with him in theory—if not in practice.

Both books will convict the average Alpine Clubman of his stupendous ignorance of a region full of glorious peaks, passes, and glaciers, with which even our most travelled climbers are but superficially acquainted.

Illustrierter Führer durch die Hohen Tauern. Von H. Hess. (Vienna: Hartleben, 1886. 3s. 6d.)

This is a guide to two of the great glacier groups of the eastern Alps, named after their principal summits, the Gross Venediger and Gross Glockner districts. For the ground it covers—which is comparatively limited—it appears to be the most complete work issued. The illustrations are fair, and the maps admirable and on a large scale, supplying all that a mountaineer needs and superseding the Government survey. The text appears to be most carefully compiled, and the writer appears to have a soul for scenery as well as a stomach and a brain for figures. He mentions the view from his hotel windows and says nothing of the beer and the bill.

Murray's Handbook to Switzerland, Savoy, and Piedmont. 17th edition. (2 vols., 1886. 9s.)

After an interval of seven years we have a new edition of this venerable work, which has nearly completed its half-century. So far as the text goes it has fairly kept pace with the times, and, although addressed rather to the general public than to mountaineers, gives accurate if brief information as to mountain ascents. The chapter in the preface on the dangers of the High Alps and how to avoid them seems to summarise very fairly the views of what we may call the orthodox school of English Alpine Clubmen.

In the routes of the present edition we find few conspicuous changes. The St. Gothard and other new railways have of course been inserted, and a good deal of fresh information seems to have been inserted in certain districts—for example, the Vaudois valleys and the neighbourhood of Simplon. On the other hand a useful route through the Bergamasque Alps has been obliterated. It may be well to point out that by a slip the large 'Geschichte der Schweiz,' by K. Dändliker (Zürich, 1884-6, 2 vols. out of three already published, 12 francs a volume), is omitted on page xlv. of vol. i., and it is to this book that the latter part of the description ('vivid and interesting,' &c.) given of Daguët's book really belongs (p. xlvi.)

If the work is to hold its own the publishers and editor may before long, perhaps, have to consider very seriously two questions—whether they ought not to rival German works in a profusion of large-scale district maps, and whether the routes might not be altogether rearranged. The St. Gotthard Tunnel has revolutionised Swiss travel, and many who now go to the Lake of Luzern, Eastern Switzerland, and the Italian lakes do not care to carry a volume on the Oberland, Pennine Alps, and Savoy. Eastern Switzerland as far as the Lake of Luzern and the St. Gotthard might be thrown into one volume with the Italian lakes, the remaining routes forming a second.

Tschudi's Turist in der Schweiz. 28th edition. (St. Gall, 1886. 10s.)

This admirable work adds yet this to its other merits, that it appears annually in a new edition.

Errores pauci fuerint si forte libello,
Errores paucos tollat amica manus

is the modest motto chosen by Herr von Tschudi. We take him at his word. In the Mont Blanc district his epithets appear somewhat piled on. Thus the Col d'Argentière is 'nur für unerschrockene Gletscher-Matadore;' the Buet is 'mit gutem Führer nicht sehr schwierig, aber streng,' and prodigious 'times' are allowed for it. The Col de Voza is alternately 'ganz leicht' and 'etwas streng.' In crossing the Col de la Tour Ronde there is no need to go to the hut on the shoulder of the Aiguille du Midi. The new railway to Aosta is not mentioned in the text; nor does it appear in the map of Savoy, which has, moreover, no scale attached to it. The railway maps, which replace district maps, are, we think, wrong in principle. Some are imperfect in detail: for instance, Lanzo d'Intelvi, Monte Generoso, and the connecting roads are hardly indicated; the highroad on the northern shore of the Lake of Thun is left incomplete.

Having suggested these few corrections we must repeat that, taken as a whole, this is the most thorough and accurate handbook to a large portion of the alpine region that has yet appeared. Every new ascent or route is chronicled briefly, but just in its right place, while the book is supplied with an admirable index. One wishes, however, for maps of special districts. The information given as to the history of the cantons can hardly be considered superfluous when the last geographical textbook published in this country tells its readers that the cantons are 'mostly little republics,' and that Neuchâtel is still subject to 'the King of Prussia'!

THE
ALPINE JOURNAL.

FEBRUARY 1887.

(No. 95.)

MOUNTAINEERING IN THE MADERANERTHAL.

BY W. CECIL SLINGSBY.

AT the beginning of August 1886 my wife and I, with some lady friends, spent a most enjoyable fortnight in this lovely valley, and though the weather was not quite to our liking, we managed to get some capital climbing when the weather was good, and on the wet days my courage was stimulated by reading 'The Adventures of Jack Sheppard,' whose mountaineering abilities must have been of a very high order, though it is just possible that in these days of progress his mode of climbing chimneys, as well as his reasons for climbing them, might meet with severe criticism from our modern mountaineer.

On the ascent of the Oberalpstock, my wife and I were very much struck with the grandeur of the range across the Maderanerthal, immediately facing us, from the Windgälle to the Scheerhorn, which presents a series of dark and rugged precipices, here and there furrowed by steep snow couloirs, the tongues of small glaciers below, which offer most tempting variations on the ascent of mountains already climbed, or possible routes to untrodden peaklets. In many respects the most beautiful peak is one standing between the Grosse Windgälle and the Gross Ruchen, a most lovely *aiguille*, which our guides told us had not been ascended, though it had been attempted, and that it was impracticable. The grim-looking wall of the Gross Ruchen, and the west face of the Scheerhorn were also described as unclimbable.

The name of the *aiguille* was said to be 'Weiss Stöckli.' We laughed at this, as the only claim that the mountain can have to the appellation 'Weiss' is that it is composed of limestone, which is not absolutely black. There is still in

this district the greatest confusion respecting the nomenclature of the mountains ; some of them enjoy two names, whilst in other cases several distinct mountains join at one. On Dufour's map the *aiguille* in question has no name, but just north of it—in the next valley, in fact—are two much lower peaks, called 'Schwarz Stöckli' and 'Weiss Stöckli.' The men in the Maderanerthal, with a paucity of ideas not wholly confined to them, have simply tacked on the name of the nearest of the two little peaks to the *aiguille*, unsuitable though it is, and there, alas! on the New Swiss Federal Map, the dark rock peak, and the tiny snow one behind it, have each the same absurd name—in small letters be it noted—of 'Weiss Stöckli.' As I will not be a party to the perpetuation of such an absurdity, I take the liberty of speaking of the *aiguille* as the Höhlenstock or Kalk Höhlenstock.

At the hôtel I met Messrs. Harold A. Beeching and P. A. L. Pryor, of Magdalen College, Oxford, who had recently climbed the Grosse Windgälle, and had, like me, been much fascinated by the Höhlenstock, which they had examined most closely, with the view of attempting its ascent. Their guides told them that no men of the district would like to tackle it. The desire to attack it without guides was of course irresistible, and we resolved at least to do our best to disprove its inaccessibility. We agreed to add to our party Messrs. R. W. Staniland and Wm. White, with whom, and two guides, I had made a new but very easy expedition, the ascent of the Düssistock by the western face. The loafers, who lounged about the hôtel, guessed that we had some dark scheme in view, but we kept our own counsel and merely made preparations for a long mountain day.

Thursday evening, August 12, was as lovely as one could wish it to be, and the snowy mountains beyond the Reuss valley sparkled brilliantly in the silvery moonlight, while there was not a breath of wind to rustle through the pines surrounding the hôtel. The barometer had at last gone up, and we determined to go up too, on the morrow. On Friday morning we were up betimes, and whilst at breakfast we saw the moon set behind the Bristenstock. We got off at 2.55 a.m., and had just sufficient light to enable us to follow the path up the valley without a lantern. Our route led us first past the chalets of Alp Gnof, from whence we saw the snow peaks one by one in order of height receiving the blush of early sunshine. Near the Stäfel Alp we saw several little pot holes in the limestone plateau, which, with their usual subterranean streams, invite exploration, as, in fact, so many

yet do in the north of England. A merry flock of goats scampered after us over the hard-frozen ground for very joy of heart, and all nature seemed to be rejoicing. At 5.50 we reached the Stäfel glacier, west of the Schwarzberg, where we breakfasted, and studied our peak, then just in front of us. It is a rugged frost-rent pyramid rising with dark precipices out of the gentle slopes of a pure white glacier. The south face, upon which we were looking, is extremely steep, and its upper portion is divided into two broad gullies, or rather bays, by a narrow spur, or curtain of rock, which juts out far from the summit, and then meets the middle of the face by a series of perpendicular precipices. It was quite evident that we could do nothing on the western arête, as it is splintered into fantastic turrets, and it is very doubtful if it could even be reached at all. Though the eastern arête seemed impassable, yet certain gaps upon it seemed to promise a way to unknown ledges and chimneys, round the corner so to speak, which, if they existed, might make the ascent easy. We resolved to try this arête first, and, in case of failure, to do our best upon the face. I quite expected to find a couloir round the back, and indeed we spoke of climbing a little peak on the ridge of the Ruchen in addition, if the Höhlenstock should prove to go easily.

For half an hour we followed the route taken on the ascent of the Grosse Windgälle over delightfully crisp snow, and then turned to the right, straight towards the centre of our peak. At 7.15 we reached the bergschrund, from which the crags rose up very precipitously. At first we could not see any way over, but in a few minutes we found a place where the schrund was partially choked up with snow. I was lowered into it, and found it sufficiently hard at that time of the morning to hold us. As we could not climb the rocks here, we made a very interesting little traverse, partly on a ledge of rock, and partly in the schrund, and once through a very beautiful arch of snow. Then our work began in earnest, and a glance at the rocks showed us, that, from a climber's point of view, the strata lay as badly as they could, downwards towards us; and, in addition to that, each ledge was more or less fractured, covered with loose stones, and about a couple of inches of snow, which had fallen a few days previously. It was soon evident that our rope, seventy feet long, was nearly seventy feet too short for five men. Each step had to be cleared before it could be trusted, and I fancy that, as leader, I had the best time of it; at any rate snow and small pebbles did not often get down my neck.

Our progress was very slow for about 200 feet, as the greatest care was necessary on account of the steepness of the crags. In one place there was a wall of about seven feet high to climb up; it was particularly awkward, as, from the nature of the ground, no one could help me, and I mentally resolved to try hard to find a better way down. A few minutes later we found that we could avoid these really difficult crags by making use of a tongue of snow which led a couple of hundred feet above the glacier towards a col, between the Gross Ruchen and the Höhlenstock. We now made our way easily to the arête on our right, and, to our surprise, found the precipices on the north, both of our peak and of the Ruchen, to be even more savage than on the south. Nothing now remained to us but to try the face, the most promising part of which seemed to be straight above us, on the eastern side of the rock curtain. There were several places where we could not see much chance of success, especially, perhaps, just below an extremely steep and smooth chimney near the summit. Failing this I noticed another route, which I must say looked bad enough, just west of the curtain, in the greater bay of the mountain. It was now quite certain that hard work awaited us and that success was anything but assured.

For a quarter of an hour we had ordinary ledges to traverse or ascend, where we found traces of chamois. Then we reached a steep and narrow chimney, where we had about fifty feet of rare good work, and where we wished our knapsacks far enough. Above this it became broader, but perpendicular, and we were forced to make a very nasty little traverse in order to get into a gully, which was impracticable from below. With our short rope, and a minimum amount of hand and foot hold the greatest precautions were necessary, and I fear that my brave little band must have thought me an awful tyrant on account of the strict discipline which I enforced. They acted splendidly, but their patience must have been well-nigh exhausted whilst I cleared away, by axe or fingers, every loose stone with which I came in contact. The traverse was only about forty feet, but it was plenty. This gully soon eased off, but led us into another one, deep and wide, and a veritable *cul de sac*. Here there was a steep patch of old snow, the only one we found on the mountain; it ended on the top of the chimney from which we had been forced away, and led upward to a most remarkable cavern, the Höhle, which should give the name to the peak.

The cave is some 300 or 400 feet below the summit, and penetrates the face of a smooth, almost ledgeless and perpendicular slab of limestone, about 60 feet high. The mouth is about eighteen feet high by eight feet wide, and the cavern runs about 100 feet steeply up into the heart of the mountain. The winter's snow, hard as a board, was drifted a long way into it, and the roof bristled with icicles. It was then 10 o'clock and we made use of our charming luncheon place. However, our problem seemed now more difficult of solution than ever. We were in a hole; how were we to get out of it? The foot of the steep chimney, which we had seen from below, and which now looked most unpromising, came down to about 50 feet above the top of the cave, but about forty feet back. We thought it quite possible that a way might be found through the cavern, so White, who is rather thin, explored its innermost recesses, but in vain. Pryor and I tried some rocks to the left, where, after climbing about thirty feet, we reached a second but smaller cave, again leading upwards. This had a hole through it, and had we been rabbits we could have got to the bottom of the chimney. As we were not, and as there was no way over or round, we had to descend, and in so doing I hitched my rope over a knob in order to get down more safely.

We then turned towards the right of the cave's mouth, a ghastly-looking place. Two men went some little way up the cavern, in order to get the rope pretty high; then, by climbing upon the shoulders of another, and being steadied by the fourth man, who stood on the snow drift within the cave, I managed to reach a little ledge on a steep slab of rock. A crack about half an inch wide then led me some eight feet higher to a broad transverse crack, where I got capital hold. Beeching and Pryor then came up, and, whilst I stood firmly anchored, the former, by some brilliant climbing, followed the crack a rope's length to examine the arête again. It was fearfully savage and impracticable. In one place about thirty feet beyond me a steep smooth slab seemed not quite hopeless, and Beeching asked me to try it without my boots; but, as from where I stood I could see that it would lead nowhere, and as it was quite clear that, even if I did manage to get up it, I could not get down again, it is as well that we left it alone. My two companions then climbed down to the cave, and both here and at several other places later on Beeching encouraged me by saying, 'Bad place for the last man on the rope,' or, 'I would not be paid to go last.' I could certainly have done

well with some of Jack Sheppard's house-breaking tools, as well as his skill in using them. However White and Beeching made a capital human ladder for me, and I found the descent to be better than I had anticipated.

It was then 12 o'clock, and we had spent two hours in climbing within 100 feet of the cave, and had thus exhausted all routes east of the curtain. Most of our party considered that we had been fairly beaten, but close to us, and still untried, there was the great gully just round the curtain. It must be tried. Staniland, foreseeing that we could not possibly all go further, on account of the shortness of the rope, with rare self-denial volunteered to wait in the cave for our return, and, though we did not like to forsake a comrade, we saw he was right, so we agreed to his proposal and promised to lose no time whatever.

Leaving our axes, we descended about thirty feet to a ledge which led us round the curtain. When we reached the western gully we saw at once that, even if we had succeeded in climbing the rock above the cave and the very doubtful chimney beyond, we could only have gained a minor peak, from which there is no access to the highest. The western bay appeared to be very stiff, and our only chance lay in trying at first to zigzag over smooth knobs of rock near the curtain, and then to climb up a series of steep shallow gullies.

The size of our ledge soon dwindled to a hand's breadth, and we were forced to climb over a small overhanging knob. It was not difficult, but, as the rock was all loose, the greatest care was necessary. All new snow had now been stolen away by the sun, and the whole face was much too steep for any old snow to lodge there. After some good climbing over the smooth rocks, we came to a chimney, invisible from below, which seemed to promise us the very best work, if not defeat. The lower part was easy, but the top thirty feet were perpendicular, about two feet wide, and three feet deep, a mere groove in the rock. It was easy to worm our way up this, as here and there were small notches, but it was impossible to climb it without sending sundry stones down, so for this reason we all kept close to one another. On the right hand a rounded boss about two feet deep projected a foot over the chimney like the capital of a natural pilaster, and, as just below there was absolutely no foothold, we were much puzzled, for if we were to get up the peak at all, it would have to be over the capital. On the left hand a small ledge ran up from the top of the

chimney in a slanting direction to the bottom of a rocky tower. I went along this and found fair handhold when at the end of my rope, but further progress in that direction was impossible. All I could do was to steady from above, but yet behind, those below. Beeching, the last on the rope, then passed the two others and climbed upon White's shoulders, whilst I held the latter firm. As there was not a single handhold on the boss, Beeching pulled himself up by holding on with his arms. It was an exceedingly brilliant bit of climbing, and he richly deserved the ringing cheer which we gave, and which was re-echoed again and again by the crags around. The two middle men then soon pulled themselves up, as they had two ropes to depend on. Then I descended my ledge and was hauled up over the capital. Above this, a steep gully full of loose stones led us to another bad place, where our choice was limited to crossing a very steeply inclined smooth slab of rock, about forty feet long, which ended in a precipice, and across which, as I know from experience, a bear would go without any hesitation, provided that it could get there; or a narrow ledge above the slab, over which an overhanging rock projected, which would not bear touching on account of its looseness; or failure.

Neither on the slab nor on the ledge could the first man receive any help from the others. For a few seconds we thought we were beaten; then we decided that the ledge was to be tried, and Beeching generously gave way again to my leadership. As soon as the others had, as far as possible, got under cover and unroped, I pulled myself upon the ledge, just where a mass of rock, at least a ton weight, was most delicately poised. I had most carefully to avoid touching this with both hands and rope, which was most difficult to do. After crawling along ten or twelve feet I could safely clear away the loose rocks about me, and I sent down many tons of limestone, which rang out with rich metallic tones when they struck the slab below, and then rolled over the cliff, and smelt most suspiciously of brimstone. I found no good hold until I got into a gully at the full length of the rope, and then only had handhold; however I soon got the rest over one by one, and all re-roped again in order. The gully I was in again led nowhere, so I asked Beeching to lead forward whilst I came down a few steps. Our only way was up another gully directly over my rotten ledge. This was very steep and had an awkward turn in it; each climber had to be helped by his neighbour in front or behind, and, as I was the last man, I threw down tons of loose rock. After about two

ropes' length had been traversed, we came to easier ground, and then knew for the first time that victory awaited us. The arête above us on the right was terribly wild, and the crag which had been our aim when at the cave, positively overhung on all sides, and reminded me of a still finer crag, perched in a similar manner upon an arête of Mjölfnir (Thor's Hammer), a very difficult mountain in Norway, the first ascent which I made last year with Mr. Charles Hopkinson and Lars Janssen. In five minutes more we were on the western arête, and after a little cautious climbing we reached the top at 1.20.

The few loose stones lying about showed no trace of displacement by human hands, and we felt sure that the guides had spoken the truth when they said that the mountain had not been ascended. We hurrahed most lustily, then turned ourselves into stonemasons and put up a small cairn, and for a short time revelled in the view and the warm sunshine. The Brunnithal, just below us, with rich meadows, and here and there a peaceful hamlet deeply embedded in trees, and its pine-clad hills formed a delightful contrast to the storm-riven Ruchen close to us. The large snowfields of the Glärnisch surprised us, and from the Gross Glockner and the serrated ridges of the Dolomites, round by the Lepontine and Zermatt peaks, to the Wetterhorn, hundreds of lovely mountains called for our admiration. The bay of Uri was a picture in itself, and the outlines of the mountains overshadowing it stood out reflected upon its glassy surface as sharply and vividly as the mountains themselves against the deep blue sky.

However, as Staniland was waiting for us, and view-gazing would not get us back down the chimneys and over the slab, and as, besides this, time had sped swiftly by, and there were more improbable things than being benighted upon the mountain, I gave my party little time for moralising over their pipes, but got them off at 1.35. Beeching led, and sent down any loose stones that I had neglected: this made it much easier for me. The twisted gully, now swept clean, went easily; then came the slab. I anchored as before, and lowered Beeching over it; he then threw down the 'delicately poised' rock, and so got a secure place to stand on, beyond, but above the slab. White and Pryor had now a hand rail between Beeching and me and soon got over. As the ledge was now free from débris, and as I had help from Beeching, I got over fairly easily, partly by the slab. Then came the steep gully, which ends on the top of the great chimney.

Great care was needed, and we wished more than ever for a longer rope, as by the time that Beeching had reached the capital I had to move on from a most secure place. However about ten feet above the capital there was a little ledge, and here three of us had to stand. After wedging my arms and legs against the sides, I felt that I could hold a bullock for a few minutes, so I told Beeching to go on. He wriggled beautifully over the boss and out of sight, and soon called out that he was firm and waiting for us. Then Pryor went, and Beeching had to go lower. White's turn now came, and he, like Pryor, went very pluckily. I believe I then wished I was in the valley below, especially when Beeching gave me his usual consolation. As wishing would not get me there, I told him to climb up to the ledge from which I had helped them when ascending, and ordered the others to hold fast. It was certainly a nasty place, but would have been much worse if I had not had good men with me, who knew exactly what to do and who did it too. The chimney seemed to be a very strange place to get down, but it is astonishing what an amount of grip one can get between two walls two feet apart. Below the chimney was one of the few places where it might be said that there was a square yard of flat rock to stand upon. As may easily be expected, this was now a stone-heap of limestone, finely enough broken to please Mr. MacAdam himself. Here one of us happened to look on the glacier below, and saw there four people dwarfed into Lilliputian stature by the distance. We jödelled, and they replied and stood still for some time to watch us. We found out afterwards that one of them was Joseph Maria Trösch (the elder), the guide who had been as far as the cave with some Englishmen. He had seen our cairn on the Höhlenstock, and was much interested in watching us.

After passing the little knob and the traverse, at 3 o'clock we again reached the cavern, and found Staniland rather cold after his five hours' sojourn there. He had heard our hurrahs when at the top, and had been much puzzled at the amount of stones which we sent down.

Whilst we sat in and at the mouth of the cave, in the deepening shadows, enjoying a short but well-earned meal, we must have formed a subject suitable for the school of Rembrandt. A very singular accident here happened to White; he was sitting outside, just below the snow drift, when, without any warning, down came an axe—his own, I believe—which hit him a severe blow on the head and for a moment stunned him. It had been driven into the snow

three hours before, and had merely been melted loose by the sun. White was soon better, but the blow was a heavy one.

On another occasion I saw a very amusing ice-axe accident. In 1878 a friend and I were travelling between Paris and Dijon. His axe, with the head wrapped up in brown paper, lay in the net of the railway carriage amongst a most heterogeneous collection of parcels. In the middle of the night, loosened by the jolting of the train, the axe made a sudden and unprovoked attack upon the unprotected pate of an unoffending Frenchman, who jumped up from his sleep determined to defend himself, his honour, and his country from the foe, whoever he should chance to be. At first he did not see the axe, but he felt the blow, and vigorously rubbed his head and looked for weapons, chattering away most glibly all the time. My friend apologised profusely and explained matters as soon as he could get a word in edgeways, and though the Frenchman would certainly have a headache for the next twenty-four hours he became very jolly about the incident, saying it did not matter, and we were fast friends to the end of the journey.

We left the cave at 3.30, and were soon at the awkward traverse, where we made much use of our rope. Then came the narrow chimney, and after this ordinary hand and foot climbing succeeded. Beeching and I unroped for a few minutes to look at the western gully below the place where the curtain meets the face; we came to the conclusion that from where we were to the top, our route not only could not be improved, but could not even be varied to any great extent. The western gully descends to the glacier by a series of smooth ice-polished slabs of rock which are most uninviting. We now turned eastward along a level ledge towards the Ruchen, and at 4.55 we reached the tongue of glacier which we had noticed on our ascent. We got some good sitting glissades and sped along our way most merrily, keeping this time under the crags of the Ruchen instead of those of the Windgälle.

At 5.30 we were off the glacier and unroped, and at 7.5 we reached the Hôtel Alpen-Club, ready for the good dinner in store for us, and thus obeying the injunction posted on the door of the *salle à manger*: 'One begs that ladies and gentlemen will be as kind as to be punctual in dinner's time.' This notice can hardly claim to be a rival of the following 'Prohibition' posted in the railway carriages on the St. Gothard line: 'The throwing out of carriages of

jugs bottles etc: thereby the servants of the company & passers by may be endangered is strictly forbidden.'

As I do not wish to be misunderstood, and as I hate exaggeration, and detest still more the fashion of under-rating the difficulties of a mountain ascent, which on more than one occasion has led to disaster, I will merely say that the Höhlenstock is a difficult mountain, but, with ordinary care, and when good climbers are in question, it is not at all a dangerous one. There is little danger from falling stones, though I have mentioned loose stones so often. My experience leads me to the belief that on the first ascent of any rock mountain, loose stones must necessarily be met with on the ledges and in the gullies, and that each party of climbers sweeps the mountain and makes it better for the next comers. Of course we all know that limestone is more treacherous than granite, and that loose rocks will always be found in a more or less degree on the former, more if the peak is seldom climbed and less if it is often. New snow cannot lie for many hours in the sunshine on the Höhlenstock, as it is too persistently steep to allow of any great accumulation of snow and the ascent is wholly made upon the sunny side. Though the mountain is only 9,541 feet (2,908 mètres) above sea-level its ascent must always be a longer expedition in point of time than that of its loftier neighbour the Grosse Windgälle, on account of its greater difficulty, and if there be not quantity there is undoubtedly quality.

It is strange that the Maderanerthal, like many other easily accessible and lovely Alpine valleys, is so much neglected by English climbers, who, generally speaking, visit little else than the ordinary cut and dried orthodox mountain centres. Let us beware lest this want of enterprise should cause a degeneration into personally conducted mountain picnicking. The Maderanerthal is certainly one of the most delightful valleys in Switzerland, abounding in variety, and in richness of foreground, where water adds a greater share to the picturesque than usually is the case, and where the mountains, if not the highest, yet have the merit of appearing to be much higher than they really are. On account of the great variety of soil there is a very rich field open to the botanist; and I can truthfully say that there are more species of ferns, all growing luxuriantly, than I have ever found in any other valley in my life.

CLIMBING IN NORWAY.

BY CLAUDE WILSON.

(Read before the Alpine Club, June 1, 1886.)

I.

MY excuse for a paper which differs widely from most of those you are accustomed to hear, in that it is neither an account of great heights gained nor great difficulties overcome, must be that I am supplying a want, not perhaps long felt, but which will, I believe, ere long be felt. That Norway is becoming more and more popular as a resort for English tourists is certain; and though as yet no great number of climbers have been there, the signs of the times tend to show that mountaineers are turning their attention in increasing numbers to the northern peninsula as a field for their enterprise. Until a couple of years ago the climbers who had visited Norway formed but a very small party, and many even of these had been prevented by weather, by want of accommodation, and by ignorance of the geography, from doing much in the way of actual mountaineering. Mr. Slingsby, it is true, had been time and again to Norway, and had crossed passes, climbed peaks, and worked his way into remote districts, at a time when the scanty and poor accommodation, along with numerous other hardships, would have deterred less adventurous travellers. But Mr. Slingsby's name stands alone; he is at the head of mountaineering in Norway. I think Mr. Leslie Stephen suggests in one of his delightful papers that in due time Mr. Tuckett's name will be regarded in Alpine districts as that of a hero who did many and mighty deeds, deeds mightier than could be ascribed to merely mortal agency; and I think it is not more extravagant to assume that in the course of ages Mr. Slingsby's exploits will be spoken of along with those of Thor and his brethren, and that he will take a well-earned place in the city of Asgard at the feet of Odin.

But though Mr. Slingsby's name stands alone in the annals of Norwegian climbing, the number of his followers is, as I said before, gradually on the increase. In the spring of 1885 the 'Alpine Journal' contained two short notes relating to new work done in Norway in the previous summer, and last year there were at least five members of the Alpine Club in Norway, all of whom did more or less climbing.

I have, however, said nothing to justify my belief that in

the present paper I am supplying a want. Before starting last August we had taken a good deal of pains to find out as much as we could as to the nature of the country we intended to visit, more especially endeavouring to gain any information regarding mountains and mountaineering. We read Baedeker, which is, I believe, the best guide-book, and we corresponded largely with Mr. Slingsby and with other travellers who had been there before us; and though the information so obtained proved of the greatest value, our travels taught us much that we thought might prove useful to those who follow.

Many comparisons may, of course, be drawn between Norway and Switzerland; but they differ in scenery, accessibility, accommodation, expense, and in many other respects, and to some of these differences I now propose to draw your attention. The scenery of Norway is very fine, more especially about the fjords, which are perhaps unique in Europe; but the mountains are neither so grand nor so beautiful as those of Switzerland. This is to be expected, when we remember that the average height of the Norsk mountains is only half that of the Alps. But the Norwegian mountains are further less accessible; they take longer to get at. In two, or at most three, days we can be in the heart of the Alps, but we must allow nearly a week to reach any climbing centre in Norway; and when we get there, the accommodation is not such as will prove acceptable to the luxurious mountaineer, a type of which we all know many examples. Far be it from me to disparage that estimable individual: well do I like to accompany him on a fine day up an interesting, but not too laborious mountain; to share with him the frequent halts and the enjoyment to the full of the warm sunshine and glorious scenery; to share also—even to take more than my share—in the appetising repast which it has been his care to provide; and, after a somewhat carefully-performed toilet, to listen at the *table d'hôte* to his intermittent conversation and frequent, if feeble, witticisms, and to mark the eager satisfaction with which he views approvingly each succeeding dish, provided it is first handed to me. Oh no! I have far too much respect for the apolastic mountaineer to say aught to his discredit, and I only hope that twenty years hence the rising generation of climbers will not think more harshly of my degeneracy than I do of his. But he must not go to Norway. I wish to warn him kindly, but firmly.

I would here observe that this paper refers only to the

district known as Jotunheim, and that we can lay no more claim to a general knowledge of Norwegian mountains than anyone who has climbed five or six of the Oberland peaks to familiarity with the Alps. Still, Jotunheim is the district which is most likely to interest mountaineers for the next few years. I believe it offers greater variety of snow and rock climbing than any other, and though among the Lofodden and Söndmöre peaks there is more new work, the fact that they are further off, and that the explorer must depend to a much greater extent on the provisions he takes with him—a tent and cooking-stove being desirable—will probably influence the choice of the better known district being made. The Justedal and Romsdal afford excellent glacier and rock work respectively, but as many of my remarks about Jotunheim are, I believe, equally applicable to these districts, they will not, I hope, prove less useful from the fact of the experience on which they are founded having been gained in only a very limited tract of country.

Now, in Jotunheim we must proceed a day's journey beyond the region of hotels and inns before we can hope to do any climbing, and during our stay in the district we must live either in sæters or in the club huts of the Norwegian Tourist Society, and we shall do well to choose the latter whenever a choice is possible. A sæter in the mountains means a poor edition of a Swiss châlet; it is a rough built shanty with a mud floor. The two women who usually form its sole occupants look after the cows and goats which are sent in the summer months to the mountain pastures. Our experience of sleeping in sæters was that it is about as objectionable as that of sleeping, or trying to sleep, in châlets, except that at a sæter one is always certain of a kind and cordial reception, and of every attention and luxury which the place affords. One can always get good coffee roasted and ground on the spot, and this, with the excellent milk and cream always to be had, tends to make one's lot not altogether miserable. These, however, are the only articles of sæter fare which are likely to be appreciated by Englishmen. Good butter may sometimes be got, but as a rule it is extremely bad. Cheese, resembling in appearance brown Windsor soap, but not so good to eat, always exists in large quantities, and occasionally a description of white cheese of the consistence of indiarubber may be had. *Flaad-brod*, a wafery substance much like what is known in some parts of the North of England as clap-bread, only that it is made with wheat and not with oatmeal, is the substitute for

bread, and is a substance to which a British palate readily becomes accustomed, the main objection to it being that in order to satisfy the cravings of hunger an enormous amount must be consumed. A careful calculation, made by some scientific Englishmen whom we met, showed that thirty-three square feet of *flaadbrod* contained an amount of nourishment equal to one ordinarily thick slice from a quartern loaf. The plank bed which is considered by Mr. William Sikes to be a hardship is all you will find at a sæter: the straw which covers it is thin. The domestic chamois does not appear to be a denizen of all sæters, but when present he exists in enormous herds, and the results of his attacks lead one to suppose that he bears much the same proportion to the ordinary chamois of Swiss hotels as the reindeer does to the Alpine 'Gemse.' I have, however, nothing but praise to give to the 'huts' of the Norwegian Tourist Club. 'Hut' is the technical term applied to these edifices, but they are in reality excellent mountain inns of somewhat limited accommodation, but clean and thoroughly comfortable. The cooking is all that need be desired, but, like everything else in Norway, the preparation of a meal is a tardy process. As an instance of this, and I regret it was a frequent experience, we ordered dinner for seven P.M., and started one morning for a long walk. Returning at about a quarter to seven we expected in our innocence that our dinner would be ready as soon as we were: but no, not the slightest preparation had been made. The people said they did not know whether we should be back at the time we mentioned, but that they would prepare it at once, and at nine o'clock we commenced our repast. The meal when it comes is always worth waiting for. Excellent soup, fish, and meat, either mutton or reindeer; eggs, potatoes, and bread; pancakes, fruit, and whipped cream; wine, beer, and coffee or chocolate. Such then are the resources of a Norwegian Club hut, and if only these establishments were more numerous, mountaineering in Jotunheim would be no hardship. Unfortunately, however, many of the most attractive mountains are a long day's walk from the nearest hut, and those who would climb among the Horungtinder group, which culminates in Skaga-stölstind, must be contented with sæter fare.

A few words about the 'Norske Turistforening,' the excellent society which builds these huts, may not be out of place: it is an institution which is not so well known in England as it ought to be. It exists for the purpose of opening up beautiful tracts of country, and facilitating travel in every

way ; its main objects being to build huts where accommodation is desirable, to make and improve paths to waterfalls and other places of interest, to mark passes and mountain routes by cairns at frequent intervals, to erect bridges across torrents, to fix tariffs for guides, porters, and horses, and to make grants to proprietors of sæters to enable them to offer somewhat better accommodation to travellers. Mountaineers visiting Norway should certainly enrol themselves as members of this club, which may be done at Christiania or Bergen, or at any of the huts. The annual subscription is about five shillings, or for 2*l.* 10*s.* one can become a life member. Among the advantages of membership may be mentioned that a member can claim priority of accommodation at a crowded hut, that the charge for beds instead of eightpence is fourpence, and that a copy of the club's Year-book, a work which contains papers in English as well as in Norsk, is sent to him at the end of the year.

As to cost. If the traveller does not cover a large extent of country, which means expensive driving in carriages, but keeps to one district, Norway is much cheaper than Switzerland, the difference being only partly accounted for by the saving effected in guides. Without any attempt at economising, our trip of five weeks cost us only 30*l.* each.

I now come to a subject on which I wish to detain you for a little. A Norwegian guide and a Swiss guide are very different persons. Our experience of Norwegian guides was confined to three individuals—Johannes Vigdal, the schoolmaster of Solvorn ; Thorgier Sulheim, of Skjolden, a wealthy farmer who considers mountaineering to be 'a very glorious sport ;' and Lars Jensen, a peasant of Olden. All three are much better educated men than the guides one is accustomed to meet in the Alps. Sulheim and Vigdal both talk English very well, and though Lars speaks no language but his own, he is a very intelligent fellow, and spent all his spare time at the huts in reading the accounts of mountain ascents in back numbers of the Year-book. They all understand thoroughly the use of a map and compass, articles regarding the use of which Swiss guides are frequently in the dark, but their knowledge of the uses of ice-axe and rope is far more limited. When we consider the opportunities of gaining a knowledge of mountaineering which have fallen to the lot of a Norwegian guide, we shall not be surprised to find that he is inferior as a mountaineer to an amateur of average ability. Vigdal's name is better known to Englishmen than that of any other Norwegian guide, and I suppose that few,

if any, have done as much work above the snow-line as he has, and yet Vigdal has only been up eighteen peaks, or twenty-two counting second ascents of the same peak, and over about six glacier passes. He told us, moreover, that he considered Midtmochstind and Knutshultind, from Knutshullet, two mountains which he went up with us, to be the most difficult ascents he had made, and seeing that these mountains are not much more difficult, and not nearly so long as the Fletschhorn and the Wetterhorn respectively, and that many of his mountains were very easy, we may assume that he has not done much more than would serve to qualify an amateur for membership of the Alpine Club. We found him a most pleasant companion, and invaluable as an interpreter and courier; he was able to follow wherever we led on rock, snow, or ice, but he was distinctly our inferior in giving an opinion as to the practicability of a mountain, in selecting a route, or as a leading guide. Of ice-craft he knows very little, and could not at first understand why we on one occasion preferred to go half a mile round rather than take a short cut under an overhanging glacier; and he did not know that the rope should be kept fairly tight, or at any rate if he did know it he did not act up to his knowledge. He is a good rock climber when a fall would not be likely to be followed by serious results, but as the danger resulting from a slip increases, his climbing abilities seem to diminish. Nor do I regard him as a very safe climber, and to justify this remark I may mention that in descending he prefers to jump whenever that means of locomotion is at all practicable, or indeed impracticable, and he several times filled us with astonishment, not to add fear, by his marvellous saltatory achievements. Lars Jensen can follow as well as Vigdal, and is on the whole a better guide though less experienced. Of Sulheim's mountaineering abilities we formed a very high opinion: he only accompanied us once, in the ascent of Maradalstind, but on that occasion he led all the way, choosing a route which it would be difficult to improve upon and climbing well and safely. His business engagements usually prevent him from staying for more than four or five days at a time in the mountains, but anyone wishing to climb the Horungtinder will find in him a most pleasant companion and a good guide, the only one, I believe, who knows thoroughly the local topography and nomenclature.

I have made these remarks on guides because mountaineers who go to Norway should know that unless they

take a Swiss guide, which would be an absurd waste of money, they must depend mainly on their own guiding capabilities. Norway, to my mind, offers a fine field for mountaineers to try what they can do without guides. The mountains of Jotunheim are on an average distinctly easier than the Alps, and though rock climbing as difficult as anything in Switzerland may be had, there is much less unavoidable danger. The mountains are much shorter than the Swiss Alps, and it is rarely necessary to start before eight o'clock, thus avoiding what is to my mind one of the most objectionable features of mountaineering. There is still left in Jotunheim a deal of new work; a few new peaks, numerous passes, and any amount of new routes. Nor are these new routes to be disparaged; in two instances we turned an easy and dull mountain into a somewhat difficult climb of continuous interest. There is a fascination in climbing without guides as well as in doing new things, and Norway offers a combination of these two attractions without the reflection that if you do get into difficulties they would probably have been averted by taking a guide. Mr. Dent, in a paper on Amateurs and Professional Guides, which appeared in the *Journal* for August 1885, says: 'Those who have tried the experiment are often astonished to find that they possess much more of the "natural instinct" when the stress of circumstances demands its display than they ever imagined,' and with this statement we are able to concur. Though we did nothing very difficult, we found that we threaded our way among crevasses and found the right bridge across bergschrunds more easily than we had anticipated, and that we displayed more discretion in cutting steps where they were needed, and in not cutting them and so wasting time where they were not really necessary, than we had credited ourselves with. We found, moreover, the bearing of burdens even on long marches less irksome than we expected, and that step-cutting is largely a knack which, when acquired, is not excessively fatiguing. Once or twice we had had to cut steps mostly in ice for upwards of an hour, but we never had to change the leader, nor did we progress much more slowly than is usual when steps have to be cut. Therefore, I say, take Vigdal by all means; he will be invaluable unless you can speak Norsk, and he will be able to tell you what has been done and what has not, and still you will get your practice in climbing without guides.

There is a further difference between Norwegian and Swiss climbing which certainly deserves mention: I mean the

weather. It seemed to us to be more changeable in Norway, but everyone told us that we were unfortunate. On the whole I take it that the weather in August in the two countries is much the same, but its effects on the mountains differ. Bad weather in Norway is not nearly so serious as in Switzerland, and though you would not attack the most difficult peaks until a day or two of sunshine had dispersed the fresh snow and ice, you can always go up something on the first fine day, even if you wait till ten o'clock to see how the day is going to turn out.

One or two minor points may be here alluded to. Firstly, there are no large moraines in Jotunheim, and the glaciers are consequently reached with less trouble than in the Alps. This advantage is, however, fully balanced by the rough going of some of the passes which one is obliged to use in getting from one mountain centre to another. Secondly, glissading is more often to be indulged in safely than in Switzerland; and lastly, in Norway, more noticeably than in the Alps, rocks which in the distance look very difficult or impossible are found in many cases to be quite easy when they are reached.

There now remains only one point on which I wish to speak, and that relates to luggage, which should be as little and as light as possible. It should be packed in one or two waterproof sacks which can be carried by porters anywhere, and not in a Gladstone bag or portmanteau. The Norsk porters have not the carrying powers of the Swiss, and a Gladstone or portmanteau has generally to be put on a pony for transport. The pony cannot use the plank bridges across the rivers, and if there is a flood, one is thus kept waiting for days for one's luggage. What to take and what to go without must depend largely on the wants peculiar to the individual, but one or two things must be mentioned which would not occur to everyone as desirable impedimenta. A fair but not excessive supply of rope is of course a *sine quâ non*; we never had occasion to make use of our extra rope. An extra ice-axe or two may be useful, either to lend to a guide or porter, or in case of an accident to one's own. A good supply of bootnails along with a hammer and bradawl is quite a necessity, and a case of sewing materials proved invaluable to us on several occasions. We took, contrary to advice, a rather large supply of potted comestibles, and were sorry we had not taken more.

To sum up, the advantages over Norway which can be claimed for Switzerland are that it is reached in less time, that the scenery is finer, the accommodation better, and that

more luggage can be taken; that the mountains are more difficult, the guides better; and last, but not least, that in most Alpine districts one is likely, and in some certain, to meet valued friends whom we may have but little chance of seeing at other times. For Norway we may urge that it is cheaper, that the mountains are less dangerous and shorter, that midnight starts are usually unnecessary, that more new work presents, that mountaineering without guides becomes practically a necessity, and that the effect of bad weather upon the mountains is not so disastrous nor so long-lived.

II.

On Thursday, August 6, 1885, our party, consisting of R. L. Harrison, my brother Herbert, and myself, landed at Bergen, and after two days of travel by rail, road, and steamer, arrived at six o'clock on Saturday evening at Aardal, at the head of the Sognefjord. En route we had picked up Russell Starr, who had spent the previous week of glorious weather in making two new passes across the Justedal glacier, Vigdal our guide, and Lars Jensen, whom Starr was bringing with him to Jotunheim. Lars looked quite a guide, and brought with him a home-made ice-axe of extraordinary length and strangest proportions, and Vigdal was adorned by a dilapidated and very narrow-brimmed 'bowler' and top-boots. Neither of them had any nails in their boots, and we learned afterwards both from them and from Sulheim that nails are all very well for walking on the hills, but very dangerous on ice or rocks. After tea at Aardal we were rowed to the other end of the Aardalsvand, and walked in the dark up to Vetti, a tiring trudge, the latter part up an exceedingly bad footpath which in the dark was very troublesome. We knocked up Vetti of that ilk on our arrival at midnight, and were made pretty comfortable, but the accommodation is rough and ready. It was here, in what Baedeker calls 'clean and comfortable quarters,' that we first became acquainted with the Norwegian chamois, and our experience justifies us in warning travellers against sleeping in the upstairs room. The back of one of us who slept there presented a spectacle the next day which reminded one of the party of the back of the tattooed Siamese nobleman recently exhibited at the Westminster Aquarium: it was frequently on view during the following week and never failed to amuse.

The next day, Sunday, was glorious, and was spent in a

visit to the beautiful waterfall of Vetti, bathing, and pottering generally. We did not know then that that lovely day was the end of the fine weather, and that our projected ascent of Stölsnaastind by a new route on the following day would have to be abandoned. Hopes for the morrow, wholly delusive, however, carried us through a wet and wretched Monday, and Tuesday evening saw us pretty nearly wet through at Vormelid, where Sulheim met us, as had been previously arranged. This gentleman is descended, it is said, from one of the Norwegian kings, and it is, perhaps, lucky for him that they had not the same notions as he has. After greeting us when we first met, he took each member of the party aside and first inquired how old he was; then he asked whether he was married. A reply in the negative from us all cheered him up manifestly, and in his most impressive tones he warned us—'Do not get married; it is a mad zing to get married.' He seemed to consider, moreover, that we were all much too young to climb mountains. After partaking of sæter fare we held a council of war, and determined if the weather should prove fine to attack the nearest peak of the Maradalstinder, one of the lowest of the Horunger peaks, but not yet ascended, and according to local authorities impossible. Sulheim said we should have to start at three A.M., but as the weather was very wet in the early morning, I am thankful to say that we did not get off till eleven. Three hours took us to the foot of our peak, and in an hour more we were on the top. We started the actual climbing at the north-east angle, and ascended diagonally up the east face. The first sixty feet after leaving the snow was the only part of the climb that was at all difficult. I cannot say whether the mountain could be ascended by the south-east ridge, but any other way would be exceedingly difficult, if not impossible. Sulheim led the first division of the party, and did it excellently well; his choice of routes was very judicious, as the way we took was not at all the obvious way up until we were quite close to the peak. There is evidently a natural affinity between climbing and gunpowder, for on our return to the collection of three mud huts, the inhabitants, three stalwart Norwegian damsels, greeted us with the traditional cannon-firing quite after the manner of Chamonix.

Next day the weather was worse, and, there being no immediate prospect of improvement, we resolved to press on to Gjendebod, where one of the Club huts is situated. Accordingly, at half-past nine we started in pouring rain,

much to the regret of Sulheim, whom we were very sorry to leave. This worthy man insisted on accompanying us for half an hour, and nothing would satisfy him short of walking arm in arm with me along a rough track barely broad enough for one, the whole of which he took himself. We had eleven hours of hard walking through the Raudal, and arrived at Gjende wet through and nearly famished at nine in the evening. Our Gladstones had not arrived from Vetti, so, wrapped up in blankets, we waited for our dinner, and waited two hours for it, all our cries of 'strax' proving fruitless. 'Strax' is the Norsk for quickly, but its use has no effect on the Norwegian beyond exciting contraction in his risorius muscle. The next day we rested, and when we came in from a stroll were gratified to hear that our traps had arrived. They had been within eight or ten miles for four days, but nobody had thought of sending them on till some one happened to be coming our way with a horse. In the afternoon the weather began to clear and the wind got into the N., so next day we were up betimes and off by ten in the morning to ascend Simletind. The ordinary way up the western slopes is a wearisome trudge over loose boulders; so, acting on a suggestion of Slingsby's, we made for a little basin called Simlehullet, to the S. of the mountain, where we saw several fine reindeer. Here two arêtes—a south-eastern and a south-western, separated at the top by a steep couloir—run up to the southern peak, from which the top is easily reached. Slingsby had suggested the couloir, but on getting near it was evident that the right thing to do was to try one of the arêtes. We selected the more westerly as being nearest and easiest, though until we got quite near both looked pretty bad. This arête only gave us half an hour of real climbing, which was, to put it in the words of a popular comedian, 'not too much difficult, but just difficult enough.' It was a typical arête, very steep and very narrow, something like the north arête of the Gabelhorn. Vigdal did not show to much advantage on this occasion, and required a good deal of chaffing before he would come. When on the narrowest parts he resorted to the expedient of going, as I have heard a well-known Swiss guide put it, 'wie eine Kuh,' saying that he preferred safety to elegance in such places. The more easterly arête looked much more difficult, but I think it could be climbed; and various routes on the north-eastern face of the mountain might be tried, though when we were there many of them were guarded by large cornices. We had a glorious view, and were especially struck by the

eastern arête of Sletmarkhö, which we forthwith determined to try, or, at any rate, examine at close quarters. Accordingly, after two days of wet weather, it having come to pass upon the morning of the third day that the clouds lifted, we started at noon to make a nearer examination. An hour and a half took us to the snow, and about the same amount of walking over the snow-covered glacier, interrupted by the frequent disappearance of one or other of the party into a crevasse, brought us to the bergschrund at the foot of the steep snow-slope leading up to the gap where the arête begins. Crossing the bergschrund after the manner of serpents, we toiled up the slope in zigzags, taking care to get well through the eighteen inches of new snow and into the *névé* beneath, and sending down numerous small avalanches hissing into the bergschrund below. As we approached the arête it looked more and more impracticable, but we hoped it might be better on the other side. This hope proved, however, to be vain; the S. side of the ridge is quite hopeless, and, in the condition in which we found it, covered with much snow and ice, the ridge itself and the northern side of it were equally impossible. Whether it will go at all I cannot say; it will at any rate be very difficult. A fortnight later, when we were on the top, having ascended from the W., we had a look at the upper part, and thought we could have got up the last bit if we had been able to reach the plateau half-way between the gap and the top.

A few days of wet and doubtful weather followed, on the first of which Starr went off to catch the next steamer home, taking with him Lars, whom we would willingly have retained, as he is a good fellow and will probably make a fair guide some day. We were, however, already a party of four. The afternoon of the 20th was fine, and the barometer stood high, so we determined to try Knutshultind from Knutshullet, a route which Slingsby had strongly recommended to us, saying it would be a difficult glacier climb, and might prove impossible. The local people were quite sure it could not be done, and said that there was only one way to the glacier basin known as Knutshullet, viz. by the side of the stream, and that, though many had gone thither, intending to get out over the mountains which enclose it on all sides, all had returned by the way they went. We were, of course, by no means discouraged by these accounts of local failure, and accordingly next morning at nine we stepped from the boat after an hour's row across the

lake, and in an hour and a half had climbed the extremely steep pathless slopes and stood on the glacier in Knutshullet. We were in the midst of the most magnificent mountain scenery we had seen in Norway. The glacier is almost flat, about a mile broad and two miles long, and is surrounded on all sides by beautifully-shaped peaks and innumerable cols, presenting a combination of rock and snow equally attractive to the artist and the mountaineer. Here there is plenty of scope for enterprise. Not only have they not been climbed, but most of the peaks have even no names, and where the cols lead to is largely a matter of conjecture. The maps (the Amtskarter are the best), which above the snow-line are always very defective, are here absolutely useless. Our present object was to ascend Knutshultind, the highest of these peaks, which rises abruptly, a beautiful pyramid of rock and snow, to the west of the glacier. A glance at our mountain showed that we had our work pretty well cut out. Between the northern arête, studded with gendarmes, and the eastern arête, which terminated in an abrupt precipice about a thousand feet above us, was a small glacier, which ran high up the mountain and ended above in a bergschrund skirting the rock walls of the arêtes. The lower portion of this glacier descended to the main glacier below by a steep ice-fall, unlike any I know in the Alps, but reminding me more of that on the Glacier des Nantillons than any other. Another of the party likened it to the Jungfrau Joch. We gazed for some minutes, and decided to try the ice-fall, and so reach the upper part of the glacier; then, crossing the bergschrund, to ascend the rock wall of the east arête, having gained which the summit was evidently within our easy grasp. We were doubtful as to our success, and asked Vigdal if he thought we could get up, to which question he gave the oracular reply, 'Perhaps not; but perhaps.' Zigzagging up snow-slopes among large crevasses, we came in about three-quarters of an hour to the foot of the really difficult part of the ice-fall, where further progress directly up the tremendously steep cascade of ice seemed quite barred by rank above rank of séracs and walls of ice, intersected by a hopeless labyrinth of crevasses. To our left, however, just at the foot of the first phalanx of seracs, ran a ledge sloping downwards at an angle of about forty-five degrees, and ending some distance below in a cliff of ice overhanging a sheer precipice a thousand feet high. Our hope was by cutting along this to reach some place where we could find a passage upwards. Owing to the recent snows, which had been succeeded by thaws and hard frosts, the first part of

the ledge was covered by about eight inches of firm snow, which showed no tendency to slip, and in which we could make good steps by kicking; but as we got further along, the ledge curled slightly upwards and the snow-covering got thinner and thinner, till at last we were on hard blue ice, which required a soup-plate excavation for each step onwards. Fortunately we came before long to a place where a slope of ice at about sixty degrees ran up for some sixty feet between the seracs, and up this we worked slowly and very carefully. Being last on the rope, and having to stand still for a couple of minutes in each step, I could not help noticing, whenever I assumed the attitude requisite for the inspection of frescoed ceilings, Vigdal's nailless boots, and I fear I allowed myself to speculate on the possibility of his slipping. Had my fears been realised, the present account would not have been inflicted on the members of the Alpine Club. A shout from above, however, announced that our leader was at the top of the slope, and that an easy passage led on to the comparatively level part of the glacier above the fall. Five minutes later we stood together at the top of the ice-fall, feeling pretty confident of success, and determined at any rate, should the worst come to the worst, to try and find some route down other than that by which we had ascended. Had it not been for the snow on the ledge this part of the ascent would have taken a very long time, and it is quite possible that we might have had to turn back. On looking towards the rock wall which led up to the arête, it became apparent that it was far from easy, and Vigdal again said, 'Perhaps not,' an ejaculation to which he gave vent several times before we reached the arête. There were several bridges over the bergschrund, so, crossing by one of these, we attacked the rocks where they were about a hundred and fifty feet high. That these rocks were pretty difficult will be gathered from the fact that we took nearly an hour and a half to climb them. The holds were few and far between, and many of them were loose. At one place a small ledge on which our leader was standing came away, but fortunately it went down a side gully, and he had enough hand-hold to prevent his falling. Vigdal appeared quite at his worst on these rocks, and had to have his feet guided into the holds by the man below him. He had two watchwords, the continual repetition of which seemed to afford him some comfort—'Perhaps not' and 'What next?' Once on the arête it was very easy going, and three-quarters of an hour landed us on the top, six hours from the lake, exclusive of halts. After twenty minutes' rest we sped quickly

down the north-western slope of the mountain into the Svartdal. This slope, by which all previous ascents had been made, consists of loose stones and boulders, but owing to the unusual amount of snow we were able to get several good glissades. Vigdal's spirits had risen wonderfully, and he spoke of the pleasure our success would give to 'the old girl.' On inquiring to whom he referred, he said he meant the 'female woman at Gjende,' in other words, our estimable landlady. I may mention here that Knutshultind has a fine southern arête which can be approached either from Knutshullet or from Thorfinsdal. This arête offers, I think, a good and interesting climb.

A few days later saw us on what was destined to be our last Norwegian mountain, a peak which rises to the west of the col formed by the junction of the Svartdal with the Thorfinsdal. The mountain is known locally as Midtmochstind, 'the peak between the valleys,' but it is not marked on any of the maps, and is, according to Slingsby, usually considered to be the southernmost peak of the Svartdalspigger. The former name is, however, appropriate if not euphonious, and as the mountain is separated by a broad glacier basin from the rest of the Svartdalspigger, I think it is entitled to a name of its own. It had never been climbed, and, according to local guides and hunters, was perhaps possible from the south, but utterly hopeless from the north. We had never seen the southern slopes, but from Knutshultind had gazed longingly at the splendid precipice which forms its northern face, and were resolved to do our best to disprove its impracticability. It certainly looked very bad, and we did not feel confident of success till within half an hour of the top. There are two or three patches of snow on the north face, the largest of which is about half-way up, and well to the east of a perpendicular let fall from the summit. After a careful inspection with telescopes we determined to attack the rocks immediately under this snow patch, and our impression was that if we could reach this the rocks above would go. The weather was cloudy with occasional short snowstorms, and was intensely cold, the wind blowing hard from the north, and we found much ice on the rocks, which had to be carefully cut away. For the most part the rocks were good and the holds firm, though in places scanty. The face was exceedingly steep; steeper, I think, and certainly more difficult than the Rympfischhorn from the Adler, an ascent which our climb frequently reminded me of. We got on fairly quick, however, and arrived in due time exultant on the snow patch, which proved to

consist of hard glacier ice. Here, contrary to our expectations, our difficulties began. We tried the rocks above in four or five places and returned discomfited from each. In one place a footing which had not appeared insecure when the lightest member of the party had made use of it, gave way when more severely tested by the more ponderous frame of his legal friend. Very solemn did the lawyer look, hanging by his hands to a projection which might be the next to follow its neighbour in a rapid descent to the glacier. Vigdal was at the bottom of the rope, and though fortunately not hit, said very wisely, 'Perhaps not,' loud and often, and accordingly we descended. We did some of the most difficult rock climbing I have ever done on these rocks, which were for the most part good and firm, but the holds were too small and too scattered. After wasting an hour and a half, we tried, as a forlorn hope, a ledge which led horizontally to the right, with a conviction that it would lead nowhere. To our surprise and joy it brought us to a couloir which ended above and below in perpendicular cliff, but out of the opposite side of which ran a small lateral gully ending in broken ground. From here to the top was a good hour's work, up rocks glazed with ice and numerous short couloirs and ledges all covered with ice. We avoided the treacherous rocks as much as possible, and kept to the ice, and though the work was hard we progressed fairly well. At one time, soon after leaving the snow patch, Vigdal said he was cold and wished to go to the front and cut steps, but after cutting about twenty he said he was warm again, and resumed his position in the rear. On the whole, however, Vigdal went very well, and never lost his head as he had done on Knutshultind. We built a cairn on the top, and then, seeing that the whole of the south side of the mountain was easy, and, though a good deal covered with fresh snow, was free from ice, we descended by the south side of the west arête to the col at its foot, and thence down steep slopes to the glacier, where we regained our old tracks, and were soon on the path to Gjendebod.

I will not detain you with a detailed account of our subsequent wanderings. Deluded by a glorious day, a north wind, and a high barometer, we crossed the Melkedal in hopes of doing something more in the Horungtinder, and though the weather was destined to disappoint us, we had a magnificent view of that beautiful group of mountains whose peaks shoot up from the glaciers much as do the Chamonix aiguilles from above the Allée Blanche. Skagastölstind is a remarkably fine peak much resembling the Matterhorn in

outline, and though it is of course smaller, its ridges are if anything steeper.

We descended to Vetti, and, having had a day or two of sæter fare, determined to have the most magnificent repast the inn could provide. Accordingly we inspected the larder, which we found to consist of three shelves packed with tins of potted viands, each bearing a label which might have been written in Chinese for all the meaning it conveyed to us. We selected four which we were led to suppose contained respectively a soup, a fish, an entrée, and a compressed roasted fowl or turkey. Much preparation was made for this meal; we even washed our hands for dinner, but great was our disappointment to find that the four smoking tins brought from the kitchen all contained stewed kidneys. Next day in blinding snow we crossed by the Fleskedal to Eidsbod, where we had left our luggage, and on the following day were on the coach road to Lærdal.

Two remarks I will make before closing. In the early part of my paper I compared our two most difficult climbs to the Wetterhorn and Fletschhorn. In reading over the latter part, it has occurred to me that the descriptions might lead one to suppose that I had not chosen sufficiently difficult Swiss mountains as examples. I find, moreover, that I have compared one of our expeditions to the Rympfischhorn from the Adler, a climb which is, in my opinion, much easier than is often supposed. Of course, one must take mountains as one finds them, and the Wetterhorn when I ascended it was much more difficult than the Rympfischhorn. I think on the whole that the Wetterhorn and Fletschhorn may be fairly taken as what these two Norwegian climbs are really equivalent to in difficulty, though not of course in length, for it is well known that first ascents always prove more difficult than subsequent ones. Nor is this, I think, unnatural, for one loses to a great extent the sense of overcoming difficulties, if it is previously known that they can be overcome. My other and final remark is to remind such of the general public as may see this paper that it is addressed to the members of the Alpine Club, and that, while those who have been well trained in mountaineering are not likely to find much in Norway that they will be unable to attempt without guides, there are real dangers and difficulties among the Scandinavian mountains which have already led, and will lead again, to disastrous results if these ascents are undertaken by inexperienced climbers, however active they may be.

NEW ROUTES IN 1886, AND THE QUESTION OF NEW ROUTES
IN GENERAL.

BY W. M. CONWAY.

(Read in substance before the Alpine Club, December 14, 1886.)

Hast thou entered into the treasures of the snow?—JOB.

OF making many new routes there seems to be no end even in the Alps alone; if other mountain districts are to be explored with anything approaching to Alpine completeness, the task set before the Alpine Club may undoubtedly be described as endless. New routes remaining to be accomplished in the Alps belong to quite a different class from those which our predecessors of twenty years ago accomplished, or from those which have to be undertaken by explorers in the Caucasus and the Himalayas. Every mountain of any note in the Alps has been ascended; most summits have been reached from several sides and by various combinations of routes. In the opinion of some men this is tantamount to saying that the Alps are climbed out. I venture to traverse that statement. It is not till all the obvious climbs have been accomplished that, in my opinion, the final and hardest part of the work of the Alpine Club in the Alps may be said to commence. When all the peaks before a man are virgin it does not require much inventiveness to find a new peak. When all ways are untried the most obvious is as good to be taken as any other. But before a district can be said to be climbed out it is not only necessary that every peak should have been ascended by every possible route, and every pass crossed, but the much more important result must have been arrived at, the knowledge, namely, which peaks are the finest in structure and situation, which routes the most varied and interesting, and what combinations of route are best worth following.

It is advisable that every possible route should once be followed, in order that climbers may be sure for the future which routes are worth avoiding. Until all ascents have once been made there is no certainty possible. Sometimes the very last route chosen proves to be the best of all. The Dent Blanche may be selected as a good example. It has been once ascended from Zinal by the so-called *Viereselgrat*. Now we know that that route is certainly worth while going out of one's way to avoid. On the other hand the Ferpèche

route seems likely to become the favourite one for the future. In the summer of 1886 the ordinary route to the summit from the Col d'Hérens remained impracticable for weeks, but the Ferpècle arête was ascended and descended during that time with perfect safety. Here, then, is an instance of a mountain ascended in the early period of Alpine exploration, fashionable ever since, and yet a very important route to its summit being discovered only in these last days.

I could point to several other mountains in the neighbourhood of Zermatt whose best lines of ascent are not yet, I believe, fixed with final exactness. The best route to the Lyskamm was the last invented, whilst the routes to the Gabelhorn and Weisshorn have been materially altered and improved in the last few seasons.

It was easy enough in the old days to find your new peak; the difficulty was to climb it. The methods of climbing—the Alpine craft—remained to be developed. Guides were inexperienced, difficulties misunderstood were morally greater; in fact, the accomplishment required qualities of pluck and determination which the modern mountaineer little needs. If he lack them he can buy them of any good guide. Nowadays it is hard to find your new peak; once found, the climbing of it is not usually so hard. The man who would spend his summer in new Alpine ascents needs possess a minute knowledge of his district, such as no early climber could possibly attain. If he does not possess that knowledge he may chance now and again on a new route, or he may pick one up from some better informed friend, or buy one from an enterprising guide. Such chances are, however, worthless. The pleasure of new ascents in old days grew out of the peculiar difficulties they involved. The pleasure of them now comes from the exercise of ingenuity they entail. The man who cribs or buys a new route gets no more pleasure out of it than he does out of any other ascent. The pleasure it is capable of giving is reserved for the ingenious discoverer.

So much, then, for the value of a modern new route to the man who discovers and makes it; let us turn to the utility of his work to those that come after him. This utility, again, presents a contrast, when compared with the utility of the work of our predecessors, the great *bahnbrechende Leute*. The main usefulness of the work of the early climbers was not the routes they found out, but the craft they invented by the way. The average of the climbs accomplished up to the year 1870,

say, was not the best * in the Alps. The easy climbs were of course the first to be done. Most of the obviously fine climbs were accomplished between 1870 and 1880, but plenty remained untouched even after that late date. If a list of all the ascents made in the summer of 1886 were drawn up, I am convinced the majority would be found to have followed routes first taken in the last fifteen years. Perhaps one ought to strike out the fashionable climbs, such as Mont Blanc, the Wetterhorn, the Matterhorn, Piz Corvatsch, and the Breithorn, from such a list. If that were done I believe a limit of ten years might be substituted for fifteen.

The above may be true or it may not; the main point as to the utility of modern new-route making has yet to be stated, and does not depend upon the truth or falsity of what has been said thus far. Let me take my own three new routes of last year as examples: they were the Pizzo del Cervendone in the Binnenthal, the Zumsteinspitze of Monte Rosa from the north, and especially the Windjoch, † which I am thus reminded is the real subject I ought to be writing about. If the making and recording of these ascents was useful climbers will either follow them hereafter or purposely avoid them. The Pizzo del Cervendone was certainly a useful ascent primarily to myself for reasons which I shall not yet make public. The Editor of this Journal, who was my companion on that ascent, 'he knows about it all—he knows—he knows,' as Omar Khayyam has said. The ascent of the Zumsteinspitze from the north had to be done because the Italian guides were of opinion that it was very difficult, and I felt sure it was very easy, as indeed it proved to be. Now it is possible to point out how far and when that route is worth taking—what, in fact, it is good for—as in due course shall be done, when a new edition of the Zermatt Pocket Book appears.

The Windjoch, however, offers just the kind of example I want now, and it shall accordingly be referred to at greater length. It was the one thing I had set my heart on for the

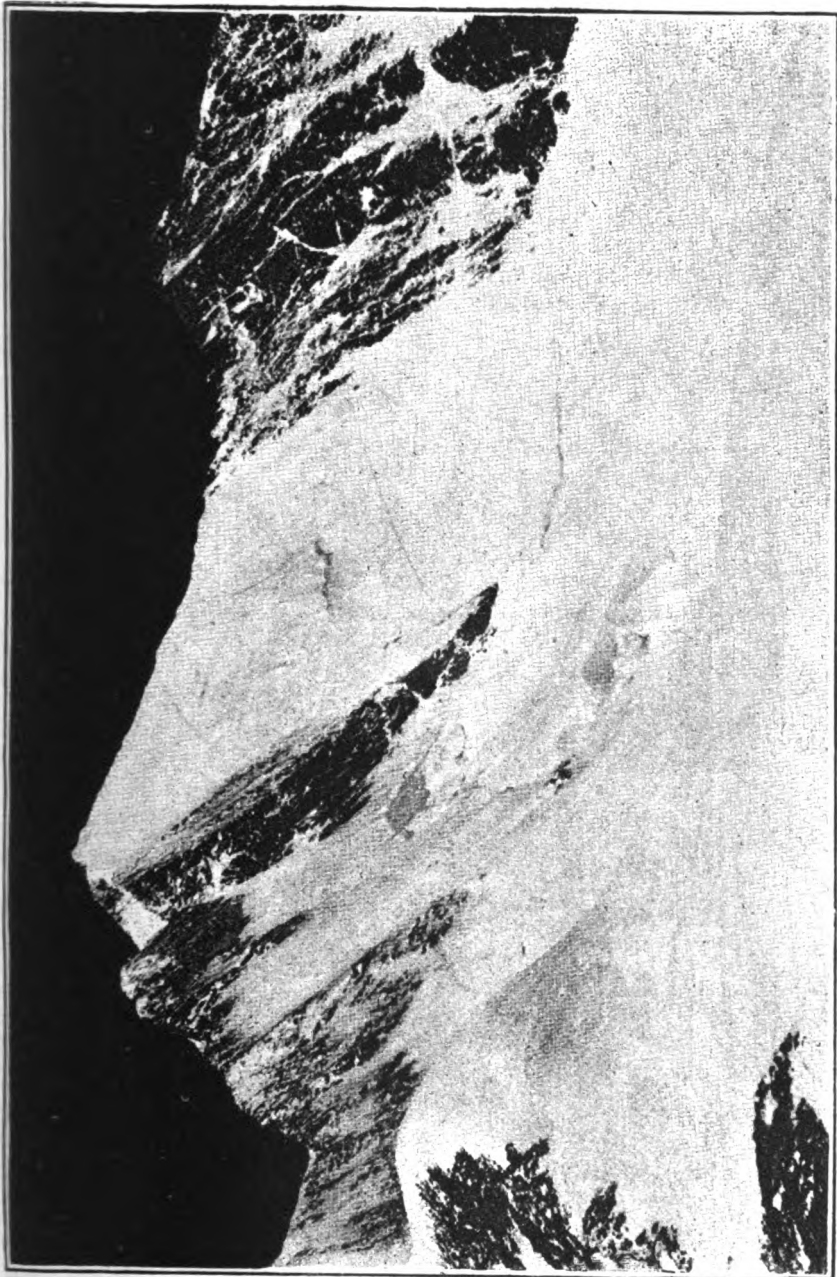
* By 'best' I do not mean most difficult, and certainly not most dangerous. I call that climb the best which leads through the finest scenery, lacks the most disagreeables, affords the greatest variety of scrambling, and without being dangerous is continually difficult. The Matterhorn from Breil is as good an example as I can remember of this kind of climb.

† In the list of New Expeditions in 1886 this pass was called the Ulrichsjoch. The name Windjoch is that by which it is known at Saas, and is certainly a far better designation.

summer of 1886. Accordingly on July 29, with Mr. G. Scriven and Mr. H. West, Truffer, Aloys Zurbriggen, and Joseph Knubel, I started away from the Täschalp huts. That day we failed to reach the summit of the Täschorh, but we got to Fee over the Mischabeljoch. Next morning we started from the hotel at 3.30, went through the wood and along the left bank of the Hochbalmbach for three-quarters of an hour till we could cross the stream. Then we climbed for an hour and a half over the slopes of the Schwarzhorn to the foot of the Fall glacier. Here we turned to the right and climbed rocks, grass ledges, and shale patches till the mass of mountain we were on narrowed to a ridge dividing the Fall from the Hochbalm glaciers. We followed this ridge till it humped into an obvious little peak (one hour and three-quarters above the foot of the Fall glacier), whence it is clear that the passage across the névé of the Hochbalm glacier must be commenced. One thing was now certain: for scenery this route ranks amongst the very finest in all the Pennine Alps. Numbers of people have been this way before, but they have not put this fact on record. The view from the rock we now stood on is superb*—first because the snowfield of the Hochbalm glacier is, for subtlety of curvature and grace of undulating form, one of the loveliest I ever saw, and secondly because the wall joining the Südlenzspitze to the Nadelhorn is surpassingly grand in scale and fine in structure. Mrs. Main afterwards ascended to this point and took some excellent photographs from it, one of which I thankfully employ as illustration to this article. After resting and roping we started across the aforesaid snowfield, mounted a gentle slope beyond, and so reached the lower of the two cols between the Ulrichshorn and Nadelhorn in three-quarters of an hour.† The col we chose was the one nearest the Ulrichshorn. It is well provided with stone ledges, with backs and other conveniences, and is in all respects a desirable col to rest upon for a long time, so much so, in fact, that we gave up all idea of ascending the Nadelhorn, or even the Ulrichshorn, preferring to remain where

* Here let me say that, having been to this point, and again read Mr. Dent's account of his ascent of the Südlenzspitze, and having compared with it Mr. Topham's account of his ascent, I am convinced that the peak ascended by Mr. Dent really was the Südlenzspitze, and I withdraw all that I have ever said in support of any contrary opinion.

† It may here be recorded that Mr. Donkin once ascended directly to the top of the Ulrichshorn from this Hochbalm snowfield.



FROM THE WINDJOCH

we were as long as possible, the view being again quite superb and far superior to that from the Ried pass.

Thus far we had only followed the route usually taken by men climbing the Nadelhorn from Saas, the selfsame route that Ulrich and Curé Imseng and old Franz Andenmatten, then a' lad, followed with so much joy years and years ago when they were making what they thought was the first ascent of the Dom. We only touched new ground when our descent commenced, and who shall say how many a forgotten chamois-hunter, or even traveller, may not have preceded us there also? There was an ice slope (usually snow, I expect) and two bergschrunds to be passed, and then as beautiful a glacier to be descended as you might wish for, with all the snowy wall of the Nadelgrat on our left as we went along. The first thing worth calling a difficulty came when we reached the foot of the Dürrenhorn, and had to negotiate a way round its rocks to the snow slope beyond it that leads up to the Galenjoch. Others had done this also before, on their way from the Ried pass, so here we had come to the end of our novelties. In two hours and a half from the Windjoch the Galenjoch rounded over below our feet, and the majesty of the Weisshorn arose in cloudless splendour before our wondering eyes. The two and a half hours' walk thence down to Randa shall be described else where and when.

It will have been observed that every portion of the ground covered by us which would present the smallest difficulty had already been traversed by one climber or another; nevertheless the route was new. It supplies a much-wanted alternative way between Fee and Randa. That alone is a good deal. The pass is just as important as the Mischabeljoch, and is much more important than the Domjoch, as far as utility goes. Then our expedition enables us to say (for we had previously crossed the Mischabeljoch, the Alphubel, the Fee pass, and the Ried pass) that the Windjoch is, for scenery, the finest pass from Fee to the Zermatt valley. Take it in the reverse direction; sleep out on the beautiful rock plateau just below the Galenjoch on the north side; climb both the Ulrichshorn and the Nadelhorn from the Windjoch and then go down to Fee: you will have done one of the noblest climbs in all the Alps.

I am convinced that multitudes of new combinations of the greatest future utility remain to be discovered in the best known districts of the Alps; and their discovery is of just as great importance as the best first ascent was

twenty years ago. The first passage of the Col Dolent was a feat to be proud of, but the climber who showed that the col could be readily crossed by help of the rocks, and need not involve several hours' step-cutting, was the man who really did the most useful work. He actually opened the way. The only object of recording ascents at all is for the help and direction of aftercomers. The credit due to explorers can only be measured by the utility of their work to others. The first ascent is therefore the first recorded ascent—the first ascent so recorded that others are enabled to follow easily where the first man forced his way in doubt and perplexity. An unrecorded ascent is nothing; one badly recorded is little more. The man who merely ascends a peak and contents himself with stating the fact can only be regarded as swaggering. If he records his route in plain language he deserves thanks. If he so records it that readers can discover its interest and beauty compared with the interest and beauty of other ascents, he deserves much more credit. Many routes long ago followed, many peaks long ago ascended, await the coming of an open-eyed man to describe and value what others have merely boasted about. To the present writer it seems that so far from there being no longer any need for an *Alpine Journal*, the next twelve volumes might be quite as interesting and valuable for the criticism they should contain as the first twelve for their records of adventure.

THE RECENT ACCIDENT ON THE MATTERHORN.

It was announced in the 'Schweizer Alpenzeitung' for December 15 last that Professor F. O. Wolf had, by direction of the 'Staatsrath' (or executive) of the Canton of the Valais, drawn up a report on this lamentable accident, and that it was to be procured from Gessler, at Sion. We were, however, only able to obtain a copy on January 20, and hasten to lay a summary of it before our readers.

The title runs thus: 'Die Katastrophe am Matterhorn (am 16., 17. und 18. August 1886). Offizieller Rapport im Auftrage des hohen Staatsrathes von Wallis, verfasst von Professor F. O. Wolf. Sitten, Buchdruckerei K. Gessler.' A short preface, signed by A. de Torrenté, chief of the Department of Justice and Police of the canton, explains that immediately after the accident a judicial enquiry was held by the Visp district authorities (on whom Zermatt is dependent), which resulted in a declaration 'that no one could be further judicially pursued and that none of those who took any part [in the accident or rescue] could be accused of any offence (which was punishable at law)

in the matter of the accident.' However, as further public complaints were made with reference to the skill of the guides concerned, the 'Staatsrath' thought that an administrative investigation should take place into all the circumstances of the case, in order to vindicate the good reputation of the local guides, and gave instructions that three points were to be specially cleared up—the behaviour of Messrs. Borckhardt and Davies's guides, the accusation made that two guides had altered the position of a rope on the mountain, and the conduct of the rescue party of guides. Herr Wolf (who is the president of the commission for examining and licensing mountain guides) was entrusted on September 10 with this task, and his report is printed to answer newspaper accusations and to enable a correct judgment to be formed of the conduct of all parties on this unfortunate occasion.

It is thus quite certain that the report is as official as possible, though it is to be borne in mind that it is not the report of the inquest, not containing therefore the sworn evidence of the guides and others concerned in this sad matter, but a report of a later enquiry undertaken to clear the guides of certain charges brought against them by newspapers and climbers.

Mr. Mercer's party reached Zermatt as early as 5 P.M. on August 17, while the next party (the Dutch gentlemen) arrived at the lower hut only at 11 P.M. that night. Two statements of the Dutch gentlemen are given, speaking in the very highest terms of their guides, Peter Tangwalder and Jos. Moser. The slow progress of Mons. de Falkner's party is attributed to want of minute acquaintance with the Swiss side of the Matterhorn on the part of the guides and specially to the great nervousness and awkwardness ('grosse Angstlichkeit und Unbeholfenheit') of the elder Mons. de Falkner, as reported to Herr Wolf by the leading guide of that party, Daniel Maquignaz.

Finally Mr. Borckhardt's death is accounted for by the two great faults committed by his party: he himself was far too lightly clad (for proof of this statement we are referred to the report of the medical man on the state of the body) and the number of guides was insufficient. 'In any case these are *the only faults* with which Aufdenblatten and Kronig can be reproached. They ought to have told their two travellers that two guides were not enough, and to have remonstrated as to their attire. Otherwise their conduct was *above all praise*; they struggled like heroes, devoted their best energies to the rescue of those entrusted to their care, and were ready to sacrifice their lives for them and to die with them.'

All this takes up nearly fifteen pages; the thirty-five remaining deal with two matters.

(i.) (Pp. 15-31.) *The various statements made by Mons. de Falkner in his letter to the 'Journal de Genève' (reprinted in our last number) as to the conduct of the guides in the hut the night before, &c.**

* Mons. de Falkner, in the course of a letter addressed to the *Rivista Alpina Italiana* for December 1886, makes certain trifling corrections relating to facts mentioned in the letter by Mr. H. Seymour King and Mr. J. T. Wills published in our last number. It was Kronig, *not* Aufdenblatten, who called

These matters are rather personal than public, and there is no need for us to enter into them, save in one case. This is the grave accusation brought by Mons. de Falkner against Taugwalder and Moser of having moved a certain rope which is fixed between the shoulder and 'Moseley's Platte' from one place to another, and of having thus, despite the track they made in the snow to draw attention to the removal, greatly delayed both the Italian and English parties. It is best answered by the voluntary statement made in writing by Daniel Maquignaz (Mons. de Falkner's leading guide) as to the effect of this action on his party, which we reproduce *verbatim et literatim* after Herr Wolf. 'Moi sousigné déclare librement que le déplacement de la corde au Mons. Cervin par les guides Taugwalder et Moser nous étaient d'ocun pré-judice au contrère elle était plus nécessaïcère de la mètre à l'endroit ou il ont mise. Zermatt, 14 Septembre. Maguignaz, Daniel.'

It may be well to add that the rope was moved from a steep couloir used of late to shorten the way, but that day dangerous by reason of the fresh snow, to a spot on the old disused and more roundabout track. Herr Wolf adds that Taugwalder and Moser declared on August 22, at the judicial enquiry, that the removal of the rope was necessary because of the state of the snow, and Moser added that the Italian guides had thanked them for their act. He strongly condemns the action of Mons. de Falkner's party on the morning of August 18, meeting Mons. de Falkner's statement (sworn to at the judicial enquiry), 'il ne nous fut jamais demandé du secours,' by the counter-statement (presumably taken from the evidence of the two guides) that Mr. Borckhardt's guides through the night and next morning were calling out 'Help! send us help!' He also blames Taugwalder and Moser for not having started up that morning, after some hours' rest, to help the Italian and English parties, and to bring up the store of provisions left by them in the lower hut, considering as quite insufficient the excuses made by them at the judicial enquiry that they 'had not enough provisions and were too tired and wet through to go up again.'

(ii.) *The accusation brought against Aufdenblatten and Kronig of having abandoned one of their 'Herren.'* This section (pp. 33-45) is taken up with the reproduction and minute criticism of a statement by Herr Lorria (one of the rescue party), which embodies in writing the charges he made *vivâ voce* to Herr Wolf, and in the course of which he puts three questions: Why did they wait in the same place till noon without making an attempt to start? Why did they not wait a little longer when they had heard the shouts of the rescuing party? Why did not they leave Mr. Davies in the upper hut and return to Mr. Borckhardt with food and blankets, brought up thither by Imboden and Aloïs Kronig, whom they met there, and who declared that they

out to the Italian party in the morning; the door of the old hut was *not* burnt by the party, and the old hut was full of snow, so that they were neither warm nor sheltered; they were not aware that the other party was then in difficulties. Mons. de Falkner also gives further explanation of the reasons which induced him to adopt the course of action described in his letter of August 28.

wished to go on to Mr. Borckhardt, but had no rope? It is impossible for us to reproduce or even summarise all the twenty-nine notes of varying length which contain Herr Wolf's comments on Herr Lorria's statements; and this partly through want of space, and partly because they contain a deplorable number of personal remarks, quite out of place in a dry recital of facts, such as a report ought to be.

In No. 3 it is admitted that the earlier and later stories of the guides did not quite tally, this being accounted for by the wish of Aufdenblatten and Kronig to spur on the three guides of the rescue party—Knubel, Chanton, and Brantschen—to do their very best to save Mr. Borckhardt, for these three were rather unwilling to go on, as they thought they would be too late to do any good and feared the approach of night. Herr Lorria's three questions are answered as follows: the first by the fact (for which we are again referred to the evidence given by Mr. Davies and his two men at the judicial enquiry) that they *did* try to go on earlier, but could not; the second, that they were not quite sure whether the shouts came from the rescue party or from the Italian party, and had heard nothing for an hour before they started. The story of the relief parties is given thus: Alois Kronig (brother of Fridolin) and Imboden (a servant of Aufdenblatten's uncle) started of their own accord to help their friends, and met Mr. Davies's party *below the old hut*; but the two had only provisions and some articles of clothing with them, and no blankets or rope, as they expected to find their friends in the lower hut. They then turned back with Mr. Davies's party, in order to help them, never having had the intention of going up to Mr. Borckhardt, and knowing that a strong and well equipped rescue party was close behind.

This task was undertaken by Knubel, Chanton, and Brantschen, whose narrative we translate from the apparently textual version printed by Herr Wolf, presumably that sworn to at the inquest.

'They reached the lower hut at 2 P.M., and met there Daniel Maquignaz, who was making a fire. Very soon after them there arrived the guides Graven, P. A. Biner, P. Perrin, and Gentinetta, and a Mons. H. Thévoz, a photographer from Geneva. The three spent fifteen minutes in the hut eating and resting. During this time Mons. de Falkner and his party came in. He was very much fatigued and so weak that he could not drink without help. The three guides changed Mons. de Falkner's clothes, putting on some things belonging to Mons. Seiler, and he then went to sleep. The Italian guides asserted that the English party behind could not reach the hut that evening, but that they were all still alive. For this reason Mons. H. Thévoz, Graven, and Biner returned to Zermatt to procure a fresh store of provisions. The others proceeded on their way up the mountain, and in about an hour (that is, after they had crossed the glacier) met Mr. Davies's party with Kronig and Imboden, but Mr. Borckhardt was not with them (3 P.M.). Learning that Mr. Borckhardt was still alive, and yielding to his companions' earnest request, Knubel, Chanton, Brantschen, and Imboden pushed on, and sent back Gentinetta to procure clothing, for they were all wet through, as it had snowed all day long. They took Imboden with them to clear out the upper hut, which they reached at

4 P.M. At 4.55 the three others reached the dead man, who was lying on his back, covered with snow, and had apparently slipped a little way down. They placed the body in a secure position and took his watch with them to prove that they had been up to him. At the old hut they found, on their return, Mr. King, with Ambr. Supersaxo and Al. Anthenmatten of Saas; they handed over the watch to Mr. King, and all of them descended together to Zermatt, which was reached at 10 P.M. that night.'

Herr Wolf then (pp. 46-50) gives us the conclusions he arrived at and his recommendations for the future. The most important of the former are—

(1) The sole causes of the accident were the sudden change in the weather; the insufficient number of guides (under the circumstances), particularly of those with Mr. Borchhardt's party; and the facts that neither Mr. Davies nor Mr. Borchhardt were fit to climb such a peak, were insufficiently clad, and badly provisioned.

(2) In other respects the conduct of Aufdenblatten and Kronig was above all praise ('über alles Lob erhaben').

(3) Mons. de Falkner and his guides are to be publicly blamed for not having in any way helped the party in distress, and Mons. de Falkner especially for having tried to shelter the ignorance of his own men by recklessly accusing Taugwalder and Moser of want of conscientiousness (*Gewissenlosigkeit*).

(4) Taugwalder deserves blame for having done nothing to help either the Italian or English parties, but praise (as well as Moser) for bringing down the Dutch gentlemen safely.

(5) The conduct of the guides of the rescue party deserves all praise.

The recommendations are that the printed 'Règlement des Guides' should be hung up in all inns and huts, and that the following additions should be made to it:—

a. In case of certain specified first-class ascents two guides are to be required for one traveller, or at least three for two.

β. To secure that the huts are properly cared for and cleaned out on leaving, travellers are bound to give their leading guide a certificate describing the state of the hut when they reached it and when they left it. Guides (foreign as well as local) and travellers ought to take great care of the huts, the use of which is given *gratis* by the S. A. C.

γ. The local authorities are charged to enforce and superintend the carrying out of the 'Règlement des Guides,' and should, in case of need, organise parties for the aid of distressed travellers and recovering the bodies of those lost, paying in each case a small remuneration, and depriving a guide of his certificate if, without good reason, he refuses to start with such a party.

Herr Wolf considers the provisions summarised under γ to be *necessary* in order to prevent disputes, to relieve as soon as practicable parties in distress, and to avoid excessive charges, such as were made on Mr. Davies for the services of the rescue party; and he adds (in the original MS., but not in the printed version) the bill sent in, remarking that it only contains a *part* of the expenses incurred.

Herr Wolf held his enquiry on September 14, and dates his

pamphlet on October 6; it is countersigned by a government official at Stalden on the 8th of the same month, and Mons. de Torrenté's preface is dated November 24.

The publication of this 'Rapport,' which we have not thought it necessary to do more than summarise, does not seem to us to serve either of the two purposes for which an official publication might have been made. It does not help us much, if at all, to solve the painful questions which are forced on our minds by the occurrence of which it treats; it does not, at least in our judgment, clear Mr. Borckhardt's guides from the serious blame which, as we have before thought it our duty to say, appears, from such evidence as we have, to rest upon them. To be of any real service for either of these purposes the 'Rapport' should have been accompanied by a full statement of the sworn evidence of all the witnesses at the judicial enquiry, the speedy publication of which seems to us to be urgently called for.

NEW EXPEDITIONS IN 1886 (*continued*).

Bernese Oberland.

OLMENHORN (3,318 mètres = 10,886 feet). *August 27.*—Messrs. Charles E. Groves and Charles H. Townley, with Louis Zurbrücken (del Ponte) and Fritz Graf junior, ascended this peak. Starting from the N. end of the Märjelsee they crossed the Gross Aletsch glacier to the grass slopes of Im Olmen, which they mounted at first S.W., then nearly due W., to the mouth (recognised by the great accumulation of screes) of a well-marked couloir S.W. of the summit. They climbed up this couloir to the base of the lower or W. peak, traversing which on its S.W. side, the snow ridge connecting it with the higher peak was gained. Following this ridge to the base of the higher peak, its summit was reached by a scramble over loose rocks (four hours from the Aletsch glacier, including some time lost on the grass slopes). After building a cairn (for the peak seems to have been previously untouched) the party regained the W. peak by the same route, traversed its S.W. flank, and then crossed over the rock ridges to the N.E. side of the mountain, which was descended by the ridge between the second and third snow couloirs (reckoning from the summit). When this ridge became too steep the party crossed the third couloir and turned over the dividing ridge to the snow, descending to the Aletsch glacier (rather N. of the point 2,531 mètres, and nearly opposite that marked 2,522) by a small glacier which may be called the Olnen glacier. On this face of the mountain, the rocks are rotten and the couloir steep. (3½ hrs. from summit to Aletsch glacier.)

TIEFENSTOCK (3,513 mètres = 11,526 feet). *September 25.*—Herr A. Lorria, with J. Gentinetta, starting from the Rhone Glacier hôtel, at 4.30, reached by a short cut the Hôtel Belvedere, and followed the usual route to the Rhone glacier, by which (in fresh deep snow) they gained, at 9.45, the Tiefensattel, between the Galenstock and the Tiefenstock. The latter peak was then climbed in twenty-five

minutes by the easy S. ridge. On the summit a cairn (without any cards or names) was found, which was probably built by the party charged with the Rhone glacier survey, though no notice of the ascent seems to have appeared in Alpine literature. Between the Tiefenstock and Rhonestock there is a very fine rock peak (c. 3,550 mètres) not named on the Federal map.

Leaving the peak at 11, the Rhone Glacier inn was regained at 2.30 by the same route.

Monte Rosa District.

HOHBERGHORN (4,226 mètres = 13,866 feet). *July 30.*—Messrs. O. Eckenstein and A. Lorria, without guides, left the usual camping place for the Dom at 3.45 A.M., and reached the Festijoch at 7.15. Descending to the Hohberg glacier they crossed above the icefall to the foot of the west ridge of the Hohberghorn (9.15 A.M.). This rock ridge was found to be very difficult, but by means of it the summit of the peak was reached at 3.45 P.M. Leaving the peak at 4.15 the party descended by Herren Schulz and Burckhardt's 1881 route from the S.,* but, having failed in an attempt to force a way down the icefall of the Hohberg glacier, had to spend the night on the Festijoch.

It is believed that the peak had not before been reached by the western ridge, though Herr Burckhardt's party † descended the upper 20 mètres of this ridge, then taking to the west flank of the peak.

GALENHORN (3,360 mètres = 11,024 feet). *August 6.*—The same party, without guides, left at 4.30 A.M. a bivouac on the right bank of the Hohberg glacier, crossed the ridge dividing Hohberg and Dürrenpfad E. of the point marked 2,911 mètres, and descended to Dürrenpfad at 8 A.M. After half an hour's halt, the two climbers separated. Mr. Lorria circumvented by *débris* the ridge below the point 3,066, and reached by the S.S.W. ridge (not marked in the new Federal Map) the summit of the peak at 10.30. About the same time Mr. Eckenstein also arrived, having traversed the ridge above the point 3,066, passed by the end of the Galen glacier (3,114), and climbed up the peak by the S. flank. No traces of previous visitors were found, and no earlier ascent seems to have been recorded. On the Gassenried side the peak descends in fearfully steep ice precipices. The descent by the easy ridge to the Galenjoch (close to which the party bivouacked for the night) took from 1.30 to 1.50 P.M.

KLEIN DÜRRENHORN (3,831 mètres = 12,570 feet). *August 7.*—The same party started from their bivouac near the Galenjoch at 5.30, and climbed for one hour along the rocky ridge which leads from the pass to the Klein Dürrenhorn. Then they took to the steep (47°) snow slopes on the right, keeping as close as possible to the ridge. The ridge itself was regained at 7.30, and after a difficult climb the party reached an ice arête where 110 steps had to be cut in hard ice covered with two feet of fresh snow. This took two hours, and was followed by iced rocks, by which the summit of the peak was gained at 11.20. The fresh snow rendered the climb difficult and dangerous. The two

* *Alpine Journal*, vol. x. p. 339.

† *Ibid.* vol. x. p. 340.

climbers descended at 12 to the col between the Klein Dürrenhorn and the Dürrenhorn, and descended down a snow couloir to the plateau of the Dürren glacier. Then they kept by the rocks to the right, ascended by them to the point marked 3,126, crossed the Galen glacier, and, after a long rest, regained at 5 P.M. their bivouac. A cairn was found on the Klein Dürrenhorn, but no card or names.

ADLERHORN (3,993 mètres = 13,101 feet). *July 26.*—Messrs. C. C. Branch and A. Lorria, without guides, left a bivouac on the Fluhalp at 3 A.M. After being forced to wait an hour for daylight, they gained, by way of the Findelen glacier, the Adler glacier, and at 8.10 reached the foot of the peak near the point 3,470, having been much delayed by a companion who remained here. Between 300 to 400 steps had to be cut in hard snow, the rocks being taken to when possible. In this way the summit was reached at 11.50, where no signs of any previous ascent were found. The return was made by the same route.

DENT D'HÉRENS (4,180 mètres = 13,715 feet, Federal map: 4,175 mètres = 13,698 feet, New Italian Survey). *September 7.*—Messrs. A. Lorria and Charles Townley, with Louis Zurbrücken and Joseph Gentinetta, having reached the summit of this peak by the western ridge,* left it at 11 A.M., and descended by the south-west rocky ridge to the Za de Zan glacier (12.20), whence Zermatt was regained by the Tiefenmattenjoch. This south-west ridge is shown quite accurately on the Val Tournanche sheet of the new Italian Survey; it is not very difficult, and completely free from all danger of falling stones. It is quite distinct from the ridge followed usually, and from that ascended by Mr. Giles Puller from the Col des Grandes Murailles.

Arolla District.

DENT PERROC, FROM THE EAST (3,655 mètres = 11,992 feet). *July 22.*—Messrs. J. C. Mills and J. A. Luttman-Johnson, with Franz (Weiss-horn) Biner and Gabriel Taugwalder as guides, crossed the Dent Perroc from Arolla to Ferpècle, descending on to the Montay glacier in the amphitheatre formed by the east face of the Dent Perroc and two spurs running eastwards from the main ridge of the Dents. The route followed in the descent is, so far as is known, new, though the main ridge farther south has been reached from the east at the point marked 3 679 mètres (and called Pointe des Genevois from the first party which ascended it on July 22, 1885: see 'Echo des Alpes,' 1886, p. 23), at the end of August 1885, by Mr. W. F. Donkin (with the brothers Andenmatten) by way of the southernmost of the two spurs.

The party descended the face by steep but firm and easy rocks until nearly half-way down to the glacier, where the rocks became more difficult. It was soon evident that a direct descent was out of the

* [As there seems to be some confusion as to recorded ascents by this ridge, it may be well to state that it was first traversed on July 17, 1873, by Mr. A. Giles Puller, descending from the peak (*Alpine Journal*, vol. vi. p. 294). Dr. R. von Lendenfeld mounted by it on July 26, 1879 (*Oesterreichische Alpenzeitung*, 1881, p. 170; *Alpine Journal*, vol. x. p. 358 note), and was followed on September 8, 1879, by Messrs. J. Baumann and Cullinan (*Alpine Journal*, vol. ix. p. 382).—EDITOR.]

question, and to the left the rocks were smooth and impracticable. The course lay of necessity to the right. Passing nearly horizontally over the face, and crossing several gullies, they reached the top of a chimney of about 100 feet, leading down to a couloir separated by a seam of rocks on the farther side from an avalanche-swept snowslope. The descent of the chimney was not an easy matter for the last man. On reaching the couloir the party descended close to and sometimes upon the rocks to the left, and striking the bergschrund at the head of the glacier at a comparatively favourable point, crossed it after some little trouble. Traversing the Montay glacier the party descended to the Mont Miné glacier, and thence reached the Ferpèche hôtel.

The ascent of the Dent Perroc from Arolla occupied $5\frac{1}{2}$ hrs.; the descent to Ferpèche, 9 hrs.

Dolomites.

WESTERN PEAK OF THE SASS MAOR (2,767 mètres = 9,079 feet). August 12.—Herrn G. Winkler and A. Zott, without guides, having ascended the eastern and highest peak (2,812 mètres) of this mountain (first climbed on September 4, 1875, by Messrs. H. A. Beachcroft and C. C. Tucker with François Dévouassoud, 'A. J.' vii. 333-5) by way of the great 'trough' leading up to the notch between the E. and W. peaks, returned to that notch, and at 5.45 P.M. started to attack the hitherto virgin W. pinnacle. This presented most formidable difficulties, owing to the smoothness of the rocks and the fact that they frequently overhang. The summit was, however, successfully vanquished, after great trouble, at 8 P.M. The party was forced to spend the night there, enjoying wonderful moonlight views and a splendid sunrise. Starting again at 4.30 A.M. on the 13th, they spent three hours in regaining by their former route the notch between the two pinnacles, and reached San Martino di Castrozza the same afternoon.

Special shoes of canvas with hempen soles (prepared by Schwaiger, of Munich) were worn by Herr Winkler on this difficult climb, and are warmly recommended, having survived many a hard climb in the Dolomites.*

On September 4 Count Denys de Champeaux and M. Henri Brulle, with the guides Bettega, of San Martino, and Barbaria, of Cortina, made the second ascent of the western peak. The most serious difficulties had to be overcome for the space of more than $1\frac{1}{2}$ hour, quite equal to the worst bits on the Meije or Western Dru. The peak is also known at San Martino as the Cima della Madonna.

* *Mittheilungen des D. u. Ö. A.-V.*, 1886, pp. 228-9.

ALPINE NOTES.

INDEX TO THE 'ALPINE JOURNAL.'—The amount of information in the publications of the chief Alpine societies grows annually as fresh volumes appear; and there is a general feeling that some sort of guide through this labyrinth should be furnished. Accordingly, in 1885 the Italian Club put forth an excellent classified index to the first fifty numbers of the 'Bollettino;' in 1886 the Swiss Club followed suit with an even more elaborate and carefully drawn up guide to the first twenty volumes of the 'Jahrbuch;' and it is now announced that the German Club has in preparation an index to all its publications from 1863 to 1885, an expansion and completion of an earlier sketch, from 1863 to 1877. It is only right that the Alpine Club should not be behind in this race, and should wish to open up the vast stores of information contained in the pages of the 'Alpine Journal,' in which the story of the conquest of the Alps is more fully told than anywhere else. Hence the Editor has, with the approval of the Committee, undertaken the task of preparing an index. It is proposed to continue this to the end of the present or thirteenth volume, and to publish it as soon as possible after the completion of the volume in May 1888. Assistance from members of the Club in indexing the several volumes has been gladly welcomed by the Editor, who, on application, has forwarded printed copies of his scheme for the index, and practical hints for ensuring uniformity. The Editor will supervise the whole work, and will amalgamate the different indexes into one. The MSS. of the separate indexes are, for the sake of convenience, to be in his hands as early as possible, and *not later than June 1, 1887*. Volumes i. to xii. have been already taken by different members of the Club: vol. xiii. is for practical reasons reserved to the Editor.

THE PICTURE EXHIBITION.—The exhibition this year was not so rich in works of varied interest as sometimes it has been; nevertheless it presented some features of special note. Mons. Loppé was only represented by one canvas, bearing a vision of the Märjelensee, fine of its kind and a good example of the artist's forceful hand. The great feature of the collection was the large number of charming drawings, for the most part unfinished, contributed by Mr. Arthur Croft. These included a series of rugged pines, the scattered inhabitants of stony slopes about the Riffelalp Hôtel. Broken foregrounds and mountain distances form perfect settings for these aged trees, and Mr. Croft has made of his materials in every case a beautiful picture. From the Riffel too he saw the storm clouds swirling about the Gabelhorn, and skilfully depicted them in a beautiful sketch. Two or three views down the valley, with the Oberland shouldered between the nearer ridges, were likewise excellent, one especially so for the clearness and precision of the rock drawing. From Zermatt Mr. Croft takes us to the Lake of Geneva, and shows us Chillon with a gloomy sunset behind, and the Dent du Midi vignetted in mist and storm above the bluest expanse of water.

Mr. Compton sent a fine picture of the Glacier des Bossons with the Grands Mulets beyond in their wonted order—the drawing of the ice being remarkably good. Mr. Willink sent some more of the sketches of climbers in action with which last year's exhibition made us familiar. His 'Sunset from the Old Matterhorn Hut' was likewise cleverly done. Mr. MacCullum's large picture of the 'Alps in Winter' attracted much attention; but when we saw it there was not sufficient light to enable us to form a judgment upon its merits. Some large views of Skye by Mr. Williams are likewise deserving of appreciative mention.

There were few new photographs capable of being ranked with those exhibited for the first time in former years. Mr. Donkin's views from the Caucasus are indeed highly valuable, and often represent scenes of undoubted grandeur, but they were taken in the presence of exceptional difficulties, which of course have influenced the result. Signor Sella's view of the highest point of Piz Roseg as beheld from the lower summit is valuable, and his Verra Glacier and South face of the Breithorn, taken from a point on the S.W. arête of Castor, is a photograph that ought to find a place in every collection. What a pity it is that all these photographs are not printed by one of the permanent processes! No such criticism can be passed on the two portraits of guides exhibited by Captain Abney, and which, we understand, are to be regarded as specimens of the illustrations to appear in the forthcoming book on the great Alpine guides. The likeness of Melchior Anderegg is excellent, and the 'process' work is remarkably good. The prints are, in fact, mezzotints produced from a good negative by a purely chemical process. It is an open secret that the very good platinotypes of views in the Engadine and the neighbourhoods of Saas and the Monteners were done by Mrs. Main. We have seldom seen better results obtained from film negatives. W. M. C.

THE DAMMAPASS.—The notice which appeared on page 122 of the last number of this Journal was already in print when the Editor called my attention to an incidental remark in Mr. T. S. Kennedy's account of the accident on the Brouillard glacier in 1874, stating that in the same year Johann Fischer had guided the Messrs. Marshall over 'a new pass from Geschenen, between the Damma and Rhone Stöcke.'* Mr. Frank Marshall, the only survivor of the party, of whom I have made inquiries, has kindly furnished me with information which leaves no doubt that his party ascended from the Damma Firn, very near to the Damma Stock, and keeping slightly to the north of the route taken by Herr Hoffmann-Burckhardt in 1865, reached the ridge almost exactly at the point from which he had started on his descent.†

M. HOLZMANN.

UNTER-GABELHORN FROM THE TRIFT VALLEY.—Since my note was published in the last number of the 'Alpine Journal' (p. 123), I have examined with care the description given by Mrs. Main ('High Life and Towers of Silence,' p. 178) of the gully which she climbed, and

* *Alpine Journal*, vol. vii. p. 112.

† *S. A. C. Jahrbuch*, iii. 131.

which had been previously ascended by the late Dr. Moseley. I now think (and Mr. Heldmann agrees with me) that this gully was the same as that by which we mounted. Mrs. Main's description is, however, a little misleading. The gully is close upon 100 feet high, and the bad bit comes a few feet only from the base, but in no part of the remainder is there any good handhold. We had a rope of 100 feet, and all of it was in use, so that when Biner was at the top of the couloir, I (the last on the rope) was about twelve or fifteen feet from its base.

ALFRED HOLMES.

ZERMATT GUIDES.—On August 17 last Mr. Lorria and I (with Peter Truffer and the youngest Gentinetta as guides) were caught on the top of the Nord End by the great snowstorm which had such fatal results on the Matterhorn. We had great difficulty in finding the way back, and we got into the séracs of the Monte Rosa glacier above the Gorner glacier. Here, at about 2 p.m., we came upon a party of two French gentlemen with two Zermatt guides, viz. Johann Perren and Elias Lauber, and a porter, Josef Furrer, who, having failed on Monte Rosa, had now become quite bewildered and so completely demoralised that they had given up all hope of saving themselves. They were sitting under a small rock. The guides, on being remonstrated with, told us that it was better to die there than on the glacier. I have no doubt that if we had not actually forced them to follow us, and tied their rope and ours together, another catastrophe like that on the Matterhorn would have ensued. It was the guides, not the travellers, who behaved so very badly in this affair, and perhaps this incident helps to throw light on the question lately raised as to the competence of Zermatt guides. Eventually, after having left our charge at the 'Blattje,' we returned to the Riffelalp a few minutes before 6 p.m. With reference to what was then happening on the Matterhorn it may not be out of place to point out that on the same day the Dom, Weisshorn, Rothhorn, and Gabelhorn were all ascended successfully and in reasonable time by properly constituted parties.

FELIX O. SCHUSTER.

THE MARITIME ALPS.—I wish to ask your readers to correct the panorama of 'the Maritime Alps from the Ile Saint Honorat' ('A. J.' vol. ix. p. 385) by substituting for 'Rocca del Mat (?)' Rocca dell' Argentera, for 'Col di Cerieja' Col della Finestra, for 'Rocca dell' Argentera' Cima del Gelas, and by erasing 'Cima del Gelas,' 'Mont Clapier,' and 'Col di Tenda.'

I had an opportunity last November of carefully examining the range from the hill of 'Californie' through a powerful telescope. The group on the W. was thus decomposed into the Rocca dell' Argentera, Cima della Nasta, Cima della Culatta, Cima Balma dei Ghilié, and Cima della Rovina.

D. W. FRESHFIELD.

A company of guides has lately been founded at S. Martin Lantosque, now a favourite summer resort of the Nice residents, and an excellent headquarters for climbers. Several huts to facilitate the higher ascents are being built by the Italian and French clubs on their respective sides of the chain.

MOUNTAINEERING IN ALASKA.—The following extracts from some notes addressed to the Editor by Mr. H. W. Seton-Karr supplement

the more detailed account of the attempt on Mount Saint Elias, published in our last number. 'To form an idea of the scenery at Yakatat, it would be necessary to imagine four or five ranges of Himalayas placed upon the Norwegian coast. Mount Saint Elias stands comparatively close upon the shore, and thus displays conspicuously its 20,000 feet of altitude. Its breadth and massiveness of form seem somehow to dwarf and diminish the impression of height one would expect. The extent of the area of glaciers is alarming, and the enormous moraines are trying. After but little prelude in the way of "foothills," or minor ranges, between Saint Elias and the coast-line, the King of North American mountains shoots up from the ocean of glacier ice which stretches as far as the eyesight can reach, south, east and west. Probably no human eye has seen the north side of the mountain. Behind it in this direction (N.E.) and within a comparatively small area are crowded a number of exceedingly lofty ranges unsurveyed, unvisited, and unknown. . . . The scarcity of provisions (we took the whole of them with us, the Indians at the base of the mountain meanwhile subsisting on berries), the approach of storm-clouds, and the rapid obscuring of the summit, together with the severe illness of Schwatka (who wished, however, to go on), compelled us to turn to the right-about. I secured several sketches, several of which will shortly appear in the "Century" magazine and in book-form. I believe the mountain to be accessible, but only by a party led by first-rate Swiss guides. The landing at Icy Bay has the disadvantage of an almost constant surf, from which there is no protection. . . . While superintending the manufacture at Sitka of some ice-axes for the party, I was presented by a Russian settler there with a genuine Carter's ice-axe, which he had in his possession, and which he was in the habit of using as a hoe for his garden. He had no idea of the purpose for which such a curiously shaped instrument was intended, but noticed that its shape resembled some drawings that I had made. He knew nothing of its history. It proved exceedingly useful, and one of the last things I expected to find in such an out of the way place. There is a small store at the Indian settlement of Yakatat, kept by a Swede (who spoke good English), and lately started for the purpose of exchanging goods for fur, principally seal and bear. . . . I made two small ascents near Nuchek in Prince William Sound in October last.'

MOUNTAINEERING IN THE LAKE DISTRICT.—Mr. W. P. Haskett Smith writes on Jan. 13:

'Seeing my name mentioned in Mr. Slingsby's "New Ascent of Scafell," may I beg space to add a few words to his clear and accurate account?

'It was a member of the Club, Mr. T. L. M. Browne, who, nearly twenty years ago, first drew the attention of climbers to Deep Gill and the rock now known as Scafell Pinnacle or Deep Gill Pillar, remarking of the latter "it looks stiff." The men who descended the gill, when drifted up in 1881 or 1882, were Messrs. A. L. Mumm and J. E. King. Except Mr. Chr. Cookson, who descended with me in the summer of 1884, no one else is known to have passed the gill till the last few

days, when Messrs. J. W. Robinson and T. Creak got up in deep snow.

'The danger of being pounded between the two pitches is not really great, even to a solitary climber, as the "high perpendicular wall on the right" is not difficult (down it my first entrance to the gill was made, in 1882), and spite of the "well-nigh ledgeless cliff on the left hand" there is a simple exit round the foot of the pinnacle. Besides the little cave (which I use now as easiest and neatest) and the outside way, quite feasible even without help of snow, there is a way of passing the lower block by a break in the right-hand wall two or three yards lower down.

'Let me thank Mr. Slingsby through you for what he says of me; he makes, however, far too much of my little scrambles, never made except when the ice factor of difficulty "vanishes."

AN EARLY ALPINE ACCIDENT.—Mr. E. T. Coleman has kindly sent some notes on this accident (as to which information was sought in our last number, p. 130), which occurred on the Buet; and once on the right track it was fairly easy to find a published account of it.

In our own pages * Mr. Freshfield makes the following statement on the subject: 'At the close of the century the Buet was the scene of a fatal accident. A young German (other accounts call him a Swede), Eschen by name, having incautiously ventured alone on the glacier, fell into a crevasse and was killed. A judicious préfet "afin que ce malheureux accident servit de leçon aux curieux qui vont visiter les glaciers de Faussigny," had a kind of urn or obelisk erected to his memory.'

We read, too, in Ebel's '*Manuel du Voyageur en Suisse*' (1818, vol. ii. 239) a more detailed account, which in substance had already appeared in the German edition of the same work, published in 1809 (3rd edition, vol. ii. 317):—'Malheur arrivé sur le Buet. L'an 1800, le 7 août, un Danois nommé M. Eschen, connu en Allemagne par une excellente traduction en vers des Odes d'Horace, périt misérablement dans cette montagne. Parti la veille de Servoz avec son compagnon de voyage, M. Simschen, il coucha au chalet de Villy. Le matin ils gravirent le Buet avec leur guide. M. Eschen, qui était toujours quelques centaines de pas en avant, disparut tout d'un coup, lorsqu'ils furent arrivés sur le glacier de neige. M. Simschen et le conducteur se hâtèrent de rebrousser chemin pour chercher du secours, et la nuit même quatre hommes partirent de Servoz, entre autres le nommé Marie Déville et l'aubergiste Ettle. Ils trouvèrent l'infortuné Danois dans une fente du glacier de cent pieds de profondeur. Il était debout, les bras au-dessus de la tête, et entièrement gelé.' This narrative is most probably the authority for the paragraph in the first edition (1838) of Murray's *Swiss Handbook* (p. 288): 'The Buet is a dangerous mountain to visit without a good guide; the fate of a young Danish traveller, M. Eschen, is still remembered; he perished in August, 1800; his fate arose from his disregarding the advice of his guide.' In Dr. Martin Barry's '*Ascent to the Summit of Mont Blanc in 1834*' (Blackwood, 1836) we read (p. 29), in the description of the

* *Alpine Journal*, vol. viii. p. 19.

view from the Grands Mulets, 'Mont Buet's white dome—a warning monument of Eschen's fate—forbade the attempt to go higher.'

We have also had the good luck to come across the authentic version of this hitherto little known accident. Mons. A. Pictet (Prof. de Philosophie) published in No. 112 of the *Bibliothèque Britannique* (of which he was one of the Editors) an article entitled, 'Relation d'un accident fatal arrivé à un voyageur sur le glacier de Buet.' The copy in our possession is undated, being a 'tirage à part' of the article, but the article itself must have been written and published towards the end of 1800, the year when the accident happened. M. Pictet had started with M. d'Eymar, 'Préfet du Leman,' on a visit to the glaciers of Chamonix, and on August 8, 1800, met, soon after leaving Sallenche, a young man of dejected appearance, whom, on arriving at Servoz the same afternoon, the travellers ascertained from the guide Déville to have been the companion of a stranger who had perished the day before by falling into a crevasse on the Buet. The young man, 'M. Zimpssen' by name, had charged Déville to recover the body of his friend M. Eschen, and M. d'Eymar officially ordered Déville to execute this task. Meanwhile M. d'Eymar and Pictet had gone to Chamonix on their excursion, and here the latter gives the most authentic account obtainable of the way in which the accident had happened: 'Pendant notre séjour à Chamonix le citoyen d'Eymar, apprenant que le guide qui avait accompagné le malheureux Eschen habitait quelque part dans la vallée, le fit demander pour l'interroger avec détail sur l'accident. Il arriva: son visage et toute sa contenance peignaient encore le désespoir, mais il ne nous apprit rien que nous neussions déjà. C'était un guide pris au hasard [his name is never given]; qui paraissait peu connaître les montagnes et qui cependant, nous dit-il, avait invité Mr. Eschen, en arrivant sur le glacier, à ne pas se séparer de ses deux compagnons. Celui-ci, entraîné par cette sensation indéfinissable qu'on éprouve en atteignant les hautes cimes, et voyant au sommet du glacier, à peu de distance, deux chasseurs de chamois qui s'y reposaient, pressait sa marche pour les joindre: c'est alors qu'il fut englouti.'

Two days later, MM. d'Eymar and Pictet returned to Servoz, when they found that the body had been recovered by Déville with the aid of his two sons and Joseph Eittle, innkeeper at Servoz. A long extract from the *procès verbal* is given by M. Pictet. From this it appears that the body was found at a depth of more than 100 feet, having been stopped only by the narrowing of the crevasse, the existence of which had been all but concealed by snow. 'Le cadavre était debout, les bras élevés à la hauteur de la tête, la face regardant sur l'épaule gauche. Il était gelé.'

M. Pictet adds the following remarks, based on a personal examination of the body: 'Nous le (*sc.* le cadavre) contemplâmes avec une vive émotion, et en recherchant, avec une curiosité inquiète, à nous convaincre qu'il n'avait pas survécu un instant à sa chute. Nous en demeurâmes persuadés par des détails que nous ne tardâmes pas à apprendre et en observant qu'il avait trois des vraies côtes de chaque côté cassées, et une forte dépression du sternum; symptômes qui indi-

quaiant qu'il avait éprouvé la compression la plus subite et la plus violente. Il n'était d'ailleurs nullement défiguré: et ses traits, en harmonie parfaite, ne présentaient aucune idée de souffrance. Son passeport, trouvé sur lui avec d'autres effets, nous apprit qu'il s'appelait Frédéric Auguste Eschen, né à Eutinen dans l'évêché de Lubeck, et qu'il était âgé de 23 ans.* M. d'Eymar ordered a monument to be erected over the grave of the unhappy young man.† Later in his article M. Pictet tells us that the pressure of the body had been so severe that M. Eschen's watch had been completely flattened. Seventy-eight francs in money were found on the body, and also vol. iii. of De Saussure's 'Voyages dans les Alpes.'

M. Pictet, who had twice made the ascent of the Buet, expresses his

* Eutin (included in the administrative division—for the maintenance of the public peace—of the 'circle of Lower Saxony') was the residence of the prince bishops of Lübeck, whose temporal jurisdiction extended over parts of the eastern bit of Holstein (originally Slavonic but gradually Germanised), and did not extend to the free Imperial city of Lübeck, where they had only spiritual rights. The bishopric was secularised at the Reformation, and was held, as an hereditary possession, by the cadet or Gottorf line of the Holstein Kings of Denmark. In 1773 (to end a quarrel of nearly 100 years) the head of this cadet line (in right of his grandfather), the Czar Paul of Russia, received from the elder line of Denmark the county of Oldenburg (just W. of the Weser) in exchange for the cession of all claims on old Gottorf lands in Holstein and Schleswig. The Czar at once made it over to a younger son of the junior branch of his line, who in 1750 had received the bishopric of Lübeck from his eldest brother on the latter's being made King of Sweden (whose descendants, by the adoption of Bernadotte in 1810, still hold the crown). The nephew of this pluralist, Peter (1785 to 1803), was the last prince bishop, for in 1803 the temporal jurisdiction of the see came to an end, its territories being granted to him and transmitted to his descendants, the reigning grand-ducal house of Oldenburg.

As Holstein was a fief of the Empire, held by the Kings of Denmark, and Oldenburg a German district, we understand why M. Eschen is sometimes called a Dane, sometimes a German; while the fact that the bishop of Lübeck of his time was cousin of the reigning King of Sweden (head of junior branch of Gottorf), and might thus be counted as a member of the Swedish royal house, explains why M. Eschen is also called a Swede. In reality he was the subject of the prince bishop of Lübeck, who was also count of Oldenburg.

† We read in *The Alps, Switzerland and the North of Italy* (Cassell: 1854), p. 43:—

'A little retired from the village of Servoz, and where a most inviting path winds upwards through a rich defile towards Mont Buet, a simple column stands, on which the following inscription may be read:—

TO THE MEMORY OF
FREDERICK AUGUSTUS ESCHEN,

Naturalist, Scholar, and Poet.

Born at Eulenen, in the circle of Lower Saxony; swallowed up in a crevasse
of the

Glacier of the Buet, 19th of Thermidor, in the year 8.

Recovered from that abyss by

John M. Devillas, John Claude, and Bernard, his two sons, and John Otil.

Buried in this place by Mr. Deymar, Prefect.

This monument raised 21 Fructidor, in the year 9, under the magistracy of
Buonaparte, Cambacères, Le Brun, Consuls of the French Republic.

Department of Lake Lemán.'

great surprise at the existence there of 'ces crevasses recouvertes de neige,' and adds some very wise advice to travellers, which would be admirable even in these days, when mountaineering has become so much more of a science. He points his remarks by referring to several other recent mishaps: a young Genevese without a guide, who lost his footing on the rocks at the foot of the Aig. des Charmoz, was killed by his fall into a rocky ravine; * a young man from Zürich dashed to pieces by falling from a hill to the north of the Col de Balme (this is the well-known accident to M. Escher in 1791 on the Croix de Fer); and a Genevese boy who was killed (1794) by a bit of ice falling from the roof of the Arvéron ice cavern in consequence of a pistol shot, and swept away in the roaring torrent, others of his family being at the same time very severely hurt. The whole article is well worth reading, and has a strangely modern ring about it.

FROM THE MITTAGHORN TO THE EGGINERHORN.—On August 28 last, guided by Xavier Andenmatten, I effected the first passage of the arête running from the Mittaghorn to the Egginerhorn, near Saas. The ridge is guarded by five principal gendarmes (some of these being upwards of 100 feet in height), besides smaller members of the force. For the first half of the passage, after leaving the Mittaghorn, the way lies mostly on the eastern edge of the arête, generally skirting the larger towers, until, just when further progress by that route becomes awkward, a large hole, 6 feet in height, gives access to the western side. On approaching the final knob which forms the top of the Egginerhorn, the ridge, which at times contracts to a mere knife-edge, becomes as broad and flat as a carriage road, but the ascent of the knob has a somewhat impracticable aspect. In front the cliff rises in a smooth precipice for 80 feet or so, and on the western side, though progress at first seems easy, overhanging rocks farther on bar the way to the top. On the eastern side, however, a narrow ledge leads out on to the face of the cliff, which here is practically perpendicular both above and below. After traversing the ledge for some 60 feet a way was found up a small vertical crack. It requires care, as there is a bad rock or two, and while the body of the climbing guide is bending out above his companion's head there is no rock in the vicinity of the latter round which a rope can be twisted. The stiff bit is, however, very short, and once passed there is no further difficulty. The time occupied from point to point was 3½ hours actual going, the final rocks taking 15 minutes.

REGINALD HUGHES.

[The same expedition had been made by Mr. H. W. Topham on August 23. Mr. Topham having reached the summit of the Mittaghorn in 2 hrs. 55 min. from the Fee hôtel, traversed the whole length of the arête between the peak and the Egginerhorn, taking 2 hrs. from

* This is no doubt the accident to which W. Coxe alludes in the following passage (*Travels in Switzerland*, third edition, 1794, vol. i. p. 344, Postscript to Letter 37). Cf. also *Alpine Journal*, vol. ix. p. 16:—'A summit under the Aiguille de Charmo near the spot from which a Genevan unfortunately fell and was dashed to pieces.'

the Mittaghorn to the foot of the Egginerhorn, and $1\frac{3}{4}$ hr. up the final rocks of the Egginerhorn. The rocks are described as 'very nearly perfect all along.' We are informed, however, that the same climb had been accomplished in 1885, if not earlier, and should be glad to receive further information on the subject.—EDITOR.]

CONGRESSES OF THE FOREIGN ALPINE CLUBS.—The Swiss Club held its annual meeting from September 4 to 6 in Winterthur. The chief discussion turned on the new regulations as to the huts under the protection of the Club, the respective rights of the Club and the sections therein, the acquisition of the ground on which the huts are built, &c. It was definitely settled that the huts are to be left open and that no charges are to be made for using them—a most liberal measure which we commend to the notice and imitation of certain other clubs and sections. In cases where the hut is provided with fire wood a charge may be made, but this is not to hinder travellers from bringing their own wood with them. About 260 members were present at the general meeting on September 5, and rather more at the banquet the same evening. Several honorary members were elected, Herr Weilenmann, Herr Iwan von Tschudi, M. Eugène Rambert, and Signor Vittorio Sella being among the number. The Finsteraarhorn group is again to be the 'Excursionsgebiet' of the Club for 1887, and it was announced that the Club numbered 2,745 members, distributed over thirty-one sections. Dr. Robert Keller delivered an interesting lecture on alpine plants. The meeting in 1887 will take place at Bienne (Biel).

The German Club met at Rosenheim on August 28 and 29, about 250 members being present. A committee (including Dr. Schulz and Herr Julius Meurer) was named to collect materials for a 'History of the Exploration of the Eastern Alps,' somewhat on the lines of Herr G. Studer's invaluable 'Ueber Eis und Schnee.' The banquet seems to have been very successful and animated. The 1887 meeting will be held at Linz.

The Italian Club met at Varallo, in Val Sesia, on July 31 and following days. The King's prize of 500 lire for 1886 was awarded to the Verbano section for the erection of a hut on the Motterone, the attention it had given to replanting its territory with trees, &c. Professor Mosso gave a lecture on the physiology of alpine ascents. Major Gallet described his new solar alpine telegraph. At the banquet there were 254 present. Collective excursions were made to the Sacro Monte, and to Fobello and Rima. The meeting in 1887 will take place at Vicenza and that in 1888 at Bologna.

The French Club, despite a previous meeting in Algeria in April last, gathered no fewer than 300 members and guests together in the little fortified town of Briançon, in the heart of the Dauphiné Alps. On August 13 and 14 excursions were organised to the neighbouring hills, to Vallouise and to the Queyras, and were largely patronised. The chief day was August 15, when the old Celtic sword dance of the 'Bacchu Ber' (preserved only at Cervières) was performed by nine men to the crooning of four old dames. It was followed by an excellent concert and by the banquet, which was very brilliant and successful. The Editor of this Journal represented the Alpine Club, and

wishes to publicly acknowledge the very flattering reception which he received in that capacity. A torchlight procession was followed by really superb fireworks, and the day was brought to a close by a crowded ball, which lasted into the small hours of the morning. The Swiss Club was represented by M. Tournier, the Waldensian pasteur of Freissinières, and the Italian by Professor Brunialti. On August 16 parties started to cross next day the Cols de la Lauze, des Cavales, and de la Temple, but the weather was not very favourable. The 1887 meeting will be held in the Vosges. Many of those present at the congress went over to La Bérarde to assist at the opening of the little inn constructed there by the Société des Touristes du Dauphiné, which has twelve bedrooms, besides a dining-room, a 'salon,' a kitchen, and other conveniences. It will be opened under the management of young M. Tairraz (son of the landlord of the Montenvers hôtel near Chamonix) on July 1, 1887.

A TRAVELLER SHOT AT ON THE GEMMI.—Towards the end of September last an English traveller started alone from Leukerbad to cross the Gemmi. As he was walking along the path between the Dauben See and Schwarenbach he heard a shot fired, of which he took no particular notice, but a second shot which followed almost immediately struck and shattered the top of his alpenstock. Much alarmed, he at once hurried on to Schwarenbach and Kandersteg, and reported the occurrence at the Bär Hôtel. The landlord (Herr Egger) soon afterwards started to investigate the matter, taking with him his son and a gendarme from Frutigen. On arriving at the spot they found broken pieces of the alpenstock lying on the ground and a man crouching in a deserted hut on the hill-side. On enquiring of him what he was doing there he explained that he had come up to bring some provisions to a hunter. Believing this story, the landlord and his companions went in search of this hunter, but were soon undeceived by him, though when they returned to look for the man with the gun the latter was not to be found. Ultimately, however, he was arrested, and charged before the magistrates with sheep-stealing as well as with the attack on the traveller. It is said that he defended himself by the plea that he only intended to commit a robbery, and he was discharged on the ground that he was not in his right mind. The above details are derived from an interview I had with the traveller himself, at Grindelwald, on September 22, and from a statement made some days later to another traveller by the landlords of the Bär at Kandersteg and the Hôtel des Alpes at Leukerbad, as communicated to me by my friend Mr. A. C. Vesey.

GEORGE BENNETT.

THE PIZ D'ALBANA.—On Wednesday, August 5, 1885, a fine hot day, I left the Hôtel Rivalta, Silvaplana, at 10.25 A.M. After a short walk up the Julier Road, for a mile or so, on to the pass, I took to the right up a steep and rather stony grass slope, and by half-past eleven was on the shoulder of the mountain, with a good view of the Piz Pulatschin and the long stone shoots on the E. side—down which I 'glissaded' a few days later, descending to the Julier Road from the top of the Piz in exactly an hour. From here I had a capital view of the Piz d'Albana, the summit of which appeared to consist of two or three sharp points

placed close together. Three quarters of an hour more over some tiresome boulders brought me to the foot of the Piz itself, which afforded some decidedly interesting 'climbing' for the first twenty minutes or so, up a steep sort of rampart of sound rock in regular strata, perfectly sound, but giving little foothold. Part of this was a little perplexing at first sight, the rock lying very like old masonry, with narrow strips of grass in the interstices, up which it was necessary to crawl with some care, the wall of rock itself being for some distance little out of the perpendicular. For some time (nearly a quarter of an hour I should say) this was so much so that the smallest stone I kicked away with my feet could be heard falling for three quarters of a minute by my watch. This nice bit of climbing landed me on the arête, which is extremely fine in every sense—a splintered edge of red rock rather like the spines on a perch's back, the top of which was in many places too sharp to handle. This arête runs as nearly as possibly due north and south; on the east side I should say it would be impossible; on the west I found a fairly good and sound ledge almost all the way up; to look over the spine of rock was like looking out of a high window, sheer down for some hundred feet at least, in places a good deal more. At 1.32 I was on the top (3,100 mètres=10,171 feet, Federal map)—somewhat warm after accomplishing 4,213 feet (for this is the rise from Silvaplana) in 3 hrs. 7 min. There are three points on the summit ridge, the ascent of the third being up a very diminutive 'chimney.' From these there is a fine view of the south (S.E.S.) side of the Piz Julier, separated from the Piz d'Albana by a ravine some 2,000 to 3,000 feet deep, the sides covered with loose rocks. After a few minutes' rest—having decided for various reasons not to descend by the arête—I came down the south face of the mountain, some distance east of the arête, of which I made a careful pencil drawing from somewhat below it. The process of 'letting oneself down gently' through and among a chaos of irregular boulders of all sizes was very laborious. My alpenstock I had to discard altogether, dropping it judiciously 30 or 40 feet at a time; and I was more than once unpleasantly near following it myself. It would be absolutely impossible, in my opinion, for any human being to ascend on that side, and I should think there must be a better way down in some other direction which I did not know of. There were no traces of a path or track anywhere. I reached home at 4.30 P.M.

The (better known?) Piz Pulatschin or Polaschin (3,017 mètres), which I ascended a few days later, in exactly the same time, seemed to me not nearly so interesting. The descent on the Julier Road side is warm (and amusing) work.

The arête of the Piz d'Albana, above described, is particularly fine. The nearest thing I have seen to it in form and sharpness of edge is the western arête of the Finsteraarhorn (immediately above the breakfasting place), but I do not know that this is ever ascended.

GEORGE H. POWELL.

VARIATION OF THE ADLER PASS.—The following route from the Adler pass direct to Fee is useful and perhaps not generally known:—

Descending the Allalin glacier from the col, keep near the rocks of

the eastern ridge of the Allalinhorn. Where the rocks end and before the point marked 3150 on the Federal map is reached, an easy snow-slope to the left leads to the Hohlaub glacier. Traverse the glacier towards its N.W. corner, where there is an obvious col, reached by a very short ascent. Follow the top of the ridge for a short distance from the col towards the east, and then descend on to the Fee glacier. A zigzag course over the glacier is now necessary to avoid crevasses. Eventually bear to the right horizontally for a few minutes, and then glissade down on to the high-level route from Mattmark to Fee, just under the Egginerhorn.

Time occupied by a party taking things very easily, $4\frac{1}{4}$ hrs. from the Adler pass to the hôtel at Saas Fee. J. A. LUTTMAN-JOHNSON.

DEATH OF MR. MOORE.—At the moment of going to press we learn that Mr. A. W. Moore died at Monte Carlo on Feb. 2. He had been a member of the Alpine Club since 1861, and had served it most faithfully as Secretary and as a member of the Committee. His Alpine record is one of the most brilliant known. The Sesia Joch, the Gross Viescherhorn, the Jungfrau Joch, the Ecrins, Col de la Pilatte, Mont Blanc from the Brenva glacier, the Ober Gabelhorn, Moming Pass, Piz Roseg—such are some of the expeditions he made *for the first time*. His ascent of Mont Blanc by the Aiguille du Goûter *alone* with Christian Almer, and his opening the way for winter mountaineering by his passage of the Strahlegg and Brèche de la Meije, show his unwearied activity and fearless enterprise. Nor should it be forgotten that he was a member of the first two expeditions to the Caucasus in 1868 and 1874. Several articles by him will be found in earlier volumes of the 'Journal,' but he steadily refused to publish any large work on the Alps he knew and loved so well, though in 1867 he printed, for private circulation, his journal of 1864, in our opinion one of the most vivid and fascinating books of Alpine travel which have ever been written. We believe we are correct in saying that it was only his modesty which more than once led him to refuse the presidency of the Alpine Club. A warm-hearted and devoted personal friend and a most brilliant Alpine climber, his loss will be deplored and deeply felt by all who knew him, whether in private life or among the mountains.

REVIEWS AND NOTICES.

High Life and Towers of Silence. By Mrs. Main, formerly Mrs. Fred. Burnaby. (Sampson Low, 1886. 10s. 6d.)

MRS. MAIN'S second book on mountaineering and matters pertaining thereto has been composed and published in less frenzied haste than her former volume. It was therefore probable that it would be much better; we may go farther, and say at once that it *is* a vast deal better. She discourses very pleasantly on climbs and rambles in many parts of the Alps, mainly Chamonix, Zermatt, and the Engadine, and the book

is gracefully dedicated to Edouard Cupelin of Chamonix, the faithful guide and companion of the authoress in many of her wanderings. The Matterhorn (crossed), Weisshorn, Aiguille du Géant, and the first ascent of the Bieshorn are the most serious undertakings described; while a mere list of smaller ascents would be of considerable length.

A special feature of the book is that the authoress seems to indulge in her favourite pursuit of climbing all the year round. Whether it is summer, late in autumn, winter, or spring, with indefatigable pluck and courage she is always going up something, and apparently never quite happy unless just back from one expedition or planning another. Perhaps the most remarkable of all her narratives are three in which the authoress appears in the character of the sole guide or leader of the party. Let our readers turn to the chapter on the Diavolezza Pass in winter, and the very exciting descent through the séracs of the Morteratsch glacier, when her two companions, an English and a Swiss gentleman, showed themselves far inferior, in point of strength and skill, to their plucky 'guide chef,' who had actually to support one of them to enable him to get down, and thus save the whole party from a night on the glacier. Take again the descent of the Ried Pass to S. Niklaus, when Mrs. Main not merely prevented her incapable guide from glissading down a very steep snow couloir, but induced him to take the right way by threatening to jump over a great crevasse instead of crossing a snow bridge. So, too, the ascent up to the Col du Tour in May with a single companion, when the summit of the pass was only won (owing to deep snow) at 3.15 P.M.; of the descent the authoress writes: 'When I was firmly placed, I drew in the end of the rope, while my companion descended!' But, perhaps, the gem of the book is the attempt to cross the Stelvio from Bormio to Trafoi late in autumn, with the mishaps of the two German gentlemen, the breakdown of the English maid, the description of the night in the road-mender's house, and the final refusal of the Italian Custom-house officers to allow the party to cross the pass, on the ground that such a course was forbidden, 'once the snow is down!'

Many good stories are scattered up and down the pages of this volume. Imagine one's horror at being told that a certain woman in the village always has by her a basket of eyes (p. 37); while the answer made by the Chamonix porter, when asked, at his examination for the status of guide, what he would do to a traveller who wanted to go to sleep on a glacier (p. 150), is quite sufficient to explain the decline of Chamonix as a mountaineering centre—for this candidate obtained his certificate triumphantly, his proposed method of dealing with his 'monsieur' thus receiving official approval. A very vivid description of the manners and customs of small Alpine villages is given by the authoress, based very largely on her experience at Wiesen in the Graubünden during the winter of 1885-6; but some of them are not so very rare and uncommon as Mrs. Main seems to think. Several of the illustrations in the book are, we gather, from photographs taken by the accomplished authoress, and are fairly well reproduced. One of them (the W. peak of the Two Sisters near Pontresina from the E. peak) is amusingly like Mr. Donkin's well-known photograph of the summit

of the Géant, though we trust Mrs. Main's picture will not have the same lamentable effect as Mr. Donkin's, for when this was seen by an invalid friend of the writer's he 'had such a severe nervous attack in consequence of the impression it gave him of the horrors of the peak that a doctor had to be called up during the night to administer remedies' (p. 140).

Mrs. Main makes some very caustic remarks on the conduct of the Engadine innkeepers during the summer, while she rates the scenery of that district far lower than the neighbourhood of the Riffel Alp or the Belalp.

The proofs have been very carelessly corrected, for a number of bad mistakes occur in foreign words. Thus we have 'la deluge,' 'Chateau d'Ceux,' 'Montaignes,' 'Cantonieré,' 'Mont Malet'; while accents are scattered broadcast—witness 'concièrge' and 'Vièrge.' There is a pleasing uncertainty as to the spelling of 'gully,' which on p. 137 appears in two consecutive lines once with and once without a penultimate 'e.' Mr. Seymour King's ascent of the Aiguille Blanche de Peuteret is dated July 24, 1885, a week before it actually took place.

But these are only small blemishes in a pleasantly-written volume which will agreeably while away an hour or two on a winter's afternoon, though it does not contain the tale of any hairbreadth escapes, and is not likely to rank among the Alpine classics. The authoress tells us that she has much enjoyed 'the labour of writing it,' and we may say that we have enjoyed the labour of reading it.

Jahrbuch des Schweizer Alpenclub. Vol. xxi. 1885-6. (J. Dalp, Bern.)

With this volume appears the map of the Special District in two sheets ($\frac{1}{80000}$), with contour lines at intervals of 30 metres and with shading by Professor Heim. It extends from Rosenlauri Bad to Mörel, in the Rhone valley, N. and S., and from the Wengern Alp to the Rhone glacier, E. and W., comprising the eastern portion of the Bernese Alps and the Blindenhorn group south of the Rhone.

In so well-known a district new ascents only can be made of secondary peaks. Herren Lammer and Lorria ascended (without guides), on July 27, 1885, the Hinter Viescherhorn (4,020 metres), on August 13 the Klein Grünhorn (3,927 metres), both from the Bergli hut; and on August 17 the Kamm (3,870 metres), from the Concordia hut.* But their most exciting excursion was on the Schreckhorn. After failing on July 31 to ascend this mountain by the N.W. ridge, on account of bad weather, they made on August 11 the ascent by the usual route (losing much time by a détour) and the first descent by the N.W. ridge, a very difficult and dangerous expedition, quite to be classed with their rash ascent of the Dent Blanche in a snowstorm.† Herren Simon and Merian, with Tischhauser, on July 31, 1885, made the first ascent of the Finsteraar-Rothhorn (3,549

* *Alpine Journal*, xii. 421. [Herr Lorria has written for the *Alpine Journal* a very interesting description of these ascents, which we hope soon to publish.—EDITOR.]

† *Ibid.* xii. 526-7.

mètres), and Dr. E. Burekhardt, with Jössi and Schlegel, on August 2, 1885, that of the Nässihorn (3,749 mètres), N.W. of the Schreckhorn.

Of ascents by new routes the most interesting is that of the Jungfrau from the Roththal, as being apparently the final solution of a problem sought since 1828. On the Excursions-Karte from a point near a field of névé called the Hochfirn three ridges run S., S.W., and W. to the N. border of the Roththal. The second and third of these are called respectively Innerer and Ausserer Grat. By the Ausserer Grat Herr Dübi made his new route to the Jungfrau in 1881.* Herr F. von Almen with five companions started from the hut in the Roththal at 4.45 A.M. on September 21, 1885, and bearing to the left got at once on to the Innerer Grat. This they ascended without difficulty to the junction of the three ridges, where a steep rock, about 3 mètres in height, which they could not circumvent, gave some trouble. Shortly after the ridge passed into ice, requiring step-cutting and caution. By 11 A.M. they were on the Hochfirn. After half an hour's rest they ascended steadily and struck the final ridge about ten minutes from the top, which was reached at 12.30 P.M. The descent was made to the Eggischhorn Hôtel, which was reached by the foremost of the party at 7.30 P.M. The guides consider that when the only difficult place has been improved and the Roththal hut repaired, this route, being at once easy and safe, will become popular, not requiring more than ten to eleven hours from Lauterbrunnen.†

Herr C. Anders, with Kederbacher and Gentinetta, made the fourth ascent of the Bietschhorn by the W. ridge on September 22, 1885. The only recorded descent by this ridge was effected by Miss Brevoort and Mr. Coolidge on September 20, 1871.‡ On reaching the 'Rothe Thurm' of Herr von Fellenberg they were hindered from ascending the couloir between the W. ridge and a spur of the S. ridge (by which all previous parties had passed) on account of the state of the snow. Hereupon Kederbacher, a noted cragsman, climbed the steep rocks and the party reached the N. peak in fifty minutes, as compared with Herr von Fellenberg's 1½ hour, thus opening a new, easier, and safer route to the summit, which was reached in five hours from the Bietschjoch. The descent was made by the usual route—N. ridge—which, owing to the lateness of the season, was much more difficult.

* *Alpine Journal*, xii. 421-2.

† Herr Körber, who made the ascent by this route, says that the 'Felskopf' was very difficult and took several hours (!) to pass. Other parties also describe this route as difficult and dangerous (*Mitth.* 1886, p. 228). This is rather singular, since F. von Almen says his only expeditions previous to this were the Schilthorn, Tschingel glacier, and Petersgrat, which present no difficulty. Probably until the bad place is improved a very capable climber is wanted in front.

[This new way up the Jungfrau was made several times during the past summer by Swiss climbers, one party reaching the summit soon after 10 A.M. It is reported to be quite free from danger, and the chief difficulty will vanish when a rocky point has been blasted away, though the bad weather throughout last season had caused this operation to be delayed. The route apparently joins that from the Silberlücke on the snow-field—Hochfirn—which is reached after climbing the arête from the 'Lücke.' It is pretty certain that the Club hut in the Roththal will have to be very largely, if not wholly, rebuilt.—EDITOR.]

‡ *Alpine Journal*, vi. 114.

Dr. E. Burckhardt contributes a series of ascents in the Special District, extending from 1867 to 1885, including the Grosshorn, Nesthorn, attempt on Finsteraarhorn from Finsteraarjoch, Trugberg, Gwächten, Nässihorn, Gross Lauteraarhorn, and Lauterbrunnen Breithorn. The ascent of the last was rendered particularly difficult by an error of judgment on the part of Herr Burckhardt and his guide, who led the party. After following the W. ridge for some time they abandoned it for the S. face, which proved exceptionally difficult. In spite of remonstrances they refused to regain the W. ridge, and reached with much trouble the point where the great S. ridge abuts on the mountain. Following the same route on the descent, to use the steps already cut, they found the S. face impracticable, and were forced to descend by the great couloir to the Innerthal glacier, which cost them nearly 5 hours' step-cutting, the time from and to the Wetterlücke being 11 hours, and the whole expedition, including halts, nearly 20 hours. Herr Burckhardt is conscious that these ascents in no degree satisfy the requirements of the English climber or the mountaineer of the new German school, but he considers that they are more consonant to the spirit in which the Swiss Alpine Club was established by its founders.

Superficial amateurism and the art of climbing pushed to the extreme of mechanical skill are equally dangerous, he considers, to the true mountaineer, who is created by love for the mountains and not by technical skill, however admirable.*

Herr Simon, in a series of excursions for the purpose of photography, chiefly from the Concordia Hut, in 48 days ascended 30 peaks and crossed 15 passes. The greatest difficulties were experienced on the Weisshorn (3,558 mètres), S.E. of the Schienhorn,† on the Ober Aletsch Glacier, where Herr Simon and the instrument were on one side of the peak, and the guide on the other held the instrument by a string with one hand and Herr Simon by the collar with the other, the rope having been left below.

Herr Simon praises greatly his ice-axe, a very handy, effective, and cheap article made by F. Jörg of Zweillütschinen for 16 frs. This might be worth noticing by English climbers, who seldom can get them for less than 30 frs.

* This may be all very well, but in speaking of the error on the Breithorn it is hardly fair to say that the self-conceit (*Eigensinn*) which made them persevere in it is 'a national peculiarity of our friends across the Channel' (p. 19).

† [Herr Simon declares that on the summit he found a bottle with my card therein. The only time I have ever been any where near this ridge was in making the second ascent of the Schienhorn on August 11, 1882 (*Alpine Journal*, xi. 121). We climbed up the W. face to a snowy point on the S.E. ridge, whence the highest point of the Schienhorn was gained in ten minutes. Did Herr Simon, then, really ascend the Schienhorn and not the Weisshorn, as his description of the very curious highest pinnacle would seem to prove, or has my name crept into his account by some slip? Possibly it was Mr. T. P. H. Jose's card which he found (and mixed up in some way with mine), for, on August 6, 1883, that gentleman ascended from the E. to the highest point in the ridge between the Schienhorn and the Weisshorn (3,558).—W. A. B. COOLIDGE.]

Dr. Dübi, with his wife and the guides Christian and Hans Hari, effected a new descent from the Doldenhorn to a glacier (Faulen) between the Fisistock and Klein Doldenhorn, a route deemed impossible by Herr von Fellenberg in 1862; and a new pass between the Doldenhorn and Fründenhorn, which he calls Fründenjoch. This name is usually given to the pass between the Fründenhorn and Eschinenhorn.

Out of the Special District the only new ascents not already mentioned in the 'Alpine Journal' are those of the S.E. peak of the Dent Perroc (3,679 mètres), on July 22, 1885, by Herren Tschumi and Kündig, with Joseph Quinodoz; the S.E. peak of the Cima del Largo (3,170 mètres), on August 22, 1885, by Dr. Curtius with Ch. Klucker; the Col de Planereuse, on August 1, and the Darrei (3,537 mètres), on August 7, at the head of the Glacier of Saleinaz, by Herr L. Kurz with F. Biselx.

The most interesting contribution is that of Dr. Schulz on the Aiguilles d'Arves, prefaced by a fairly correct account of the topography of this group and the history of their ascents. Along with Herren Purtscheller and Kellerbauer he left the chalets of the Alp Commandraut at 2.50 A.M. on July 20, 1885. The Col des Trois Aiguilles (Col des Aiguilles d'Arves) was reached at 7.10, and the N. Aiguille by the usual route at 9. The descent was made towards the Col des Sarrasins. After three-quarters of the descent had been effected with ease the route became difficult. They had to descend a short, steep wall of rock by means of the rope, which was left hanging in case they should be obliged to retreat. Soon after they came to a similar place, and after some hesitation the rope was removed from above, thus cutting off their retreat. Fortune, however, favoured them, and the Col des Sarrasins was reached at 12.10, the last part of the descent being as difficult as the first was easy. They now traversed the E. base of the peak to regain the Col des Aiguilles d'Arves, and at 1.40 were at the bergschrund at the N. foot of the Central Aiguille. They ascended by the left hand of the three couloirs to the E. ridge, and chiefly by the S.E. face gained the summit at 5 P.M. In the descent they kept on the S.E. face. After following the edge of the great couloir for some time they were able to make a traverse to a snowbed, by which they reached the glacier at 7 P.M. and the moraine about dark, but they did not find the chalets till 11 P.M. On July 21 they started at 5.10 A.M., and going very easily they reached at 12.10 P.M. a col (Col de Jean Jean) on the S.E. ridge of the S. Aiguille, N. of Col des Trois Pointes or de Jean Jean (crossed by Mr. Coolidge in 1876). Descending rapidly by another couloir, at 1 they were on the moraine of the Glacier Lombard. After searching in vain for the Refuge Lombard they studied carefully the S. face of the aiguille, and at length made out the two couloirs mentioned by Mr. Coolidge. They bivouacked in a hole in the moraine, at an elevation of about 3,100 mètres. On July 22, starting at 4.10, they followed the usual route up the aiguille, choosing the left-hand one of the two small couloirs (Mr. Coolidge ascended by the right-hand one) and following its right edge till forced to descend into it. Its upper part was

so steep and narrow that Purtscheller, who led, ascended by pressing himself against both sides, and helped up the others with the rope. The ridge was reached at 5.50. The summit here seemed to overhang. Purtscheller and Kellerbauer took off their shoes, and moving cautiously to the left reached the cleft by which Mr. Coolidge and the Almers gained the summit. The rope left there by them was not to be found. Into this cleft the young Almer, supported on his father's shoulders, had climbed with great courage and agility; but, as neither Herr Schulz nor Herr Kellerbauer could present a pair of shoulders like Almer's for Herr Purtscheller's support, and the position was such that the least unsteadiness must occasion a fatal accident, they sorrowfully but wisely determined to abandon the attempt.* Regaining the Glacier Lombard, they ascended the Aiguille de Goléon, the summit of which they reached at 1 P.M. On their return to La Grave they learned that the rope had been removed from the cleft by the Gaspards, after an ascent on July 23, 1884, out of jealousy of the La Grave guides.† In conclusion Herr Schulz pays a well-deserved compliment to Mr. Coolidge, the fortunate conqueror of the Aiguilles d'Arve. The article is illustrated by engravings from sketches (not over accurate) by Herr Schulz himself.

Herr E. Burckhardt, in describing an ascent of the Lyskamm on August 19, 1881, when the last thousand feet took five hours, points out how this mountain is neglected by the modern school of mountaineers as tedious and uninteresting, and asks how the 'mountaineers without guides' would like such expeditions as the 'Eigerjoch' or 'Güssfeldtpforte,' where many hours' step-cutting is required and whose steepness forbids the use of 'Steigeisen.'

Herr Borel contributes an article on the Adamello and Brenta groups. A new hut has been built half an hour above the Malga dei Fiori, in the Val Nardis, which will much facilitate the ascent of the Presanella. Dr. Curtius describes another visit to the Bacone group, near the Maloja Pass. Herr Wäber gives an account of the western passes of the Rætian Alps, with special reference to the military

* Herr Schulz takes credit to himself for this act of self-denial in view of the sad event of August 6, and complains of the harsh judgment passed upon him and his friends in the *Alpine Journal* and by members of the Alpine Club. But there is no doubt that at any rate the elder members of the Alpine Club would disapprove of so rash an expedition, whether made by members of their own or of any other club.

† [I should like to explain that on July 22, 1878, we left a bit of rope only about 3 feet long, and this as a noose or 'cravate' round a knot of rock at the summit of the cleft—it is impossible to see it until the cleft has been overcome. Our long rope was doubled through this noose, and we let ourselves down by it, drawing it through after all the party were down. Dr. Schulz is in error in saying that our bit of rope (used again on my second ascent on July 6, 1880) has been removed; it was found on July 29, 1885 (a few days after Dr. Schulz's attempt), by M. Dulong de Rosnay's party (*Annuaire du C. A. F.*, 1885, p. 547); the party whose traces Dr. Schulz found in the ice couloir on the south flank was M. Brulle's, which made the ascent on July 17, 1885 (*Annuaire de la S. T. D.*, 1885, p. 74; *Annuaire du C. A. F.*, 1885, p. 577).—W. A. B. COOLIDGE.]

movements in 1799. Herr Trautweiler takes us far away to the Peloponnese, and describes the ascent of Malevo (1,774 mètres), the highest summit between the ancient provinces of Arcadia and Argolis.

Herr Dübi's article on Roman roads (No. III. 'Roman Roads in the Rhætian Alps') has been already noticed in these pages by Mr. D. W. Freshfield.*

Professor Heim in an interesting article contributes a number of facts as to the effects of lightning on mountain summits. Vitri-fied surfaces, sometimes covered with glass drops of various colours, have been found, in some cases reaching the size of six inches square. Generally these are found close to the summits, and were not to be observed a few mètres below it. Sometimes, though less frequently, they were to be found in depressions of the ridge, and even on slopes. Herr Simon in the tour above referred to found such vitrefactions on every summit he ascended. They are found much more frequently on crystalline rocks than on limestone, though on the former they are sometimes altogether wanting. On grass slopes the thunderbolt is observed to form a central hole a yard or more in depth, from which furrows run in all directions.

A singular experience bearing on this subject is related by Herr J. Studer. Whilst ascending from the Meglis Alp to the inn on the Säntis a violent storm surprised him when on the snowfield. Flickering lights appeared on the ridge between the Säntis and Altmann; small fireballs moved to and fro, and on coming in contact with each other burst like rockets, with red and blue lights. These were succeeded by a ball, of the apparent size of the moon, which moved along the ridge in parabolic curves. A fearful thunderclap was followed by a new phenomenon. The telephone wire was brilliantly lighted up, sheets of the electric fluid hanging down between the posts like clothes hung out to dry (*Blitzwäsche*). In a very short space of time the wire fell to the ground, melted, and the fiery brightness disappeared, leaving the party blinded, unable to recover their power of sight for several minutes.

Professor Forel, continuing his notices on the periodic variations of glaciers, states the results obtained by Dr. Lang, of Munich, with which he in the main agrees; he would, however, state more generally that periods of heat, rain, and glacier change are intimately connected and follow each other in order, though at considerable intervals.† Nearly all the glaciers observed are now advancing.

The Rhone Glacier, though gaining in some parts, still continues on the whole to lose ground, 5,675 square mètres having been left bare of ice in 1884-85. At the general meeting held September 12, 1885, at Villars-sur-Ollon it was agreed to publish the results of the examination of the Rhone Glacier during the last six years; but the

* *Alpine Journal*, xiii. 30-5.

† The Rev. T. A. Preston, Fell. Met. Soc., during observations at Marlborough College, 1865-85, established conclusively that periods of cold and heat are followed by a retardation or acceleration in the flowering of wild plants after an interval of about six weeks.

proposal to continue the work met with serious opposition. A compromise was at last agreed upon that the money contributions of the Swiss Alpine Club should be continued for three years longer and then be definitely withdrawn.

The number of guides ensured has risen to 110, exceeding the minimum stipulated by the Zürich office; but more than three-quarters of these (eighty-eight) are in Bern and Wallis, and the other sections are urged to interest the guides of their districts in this matter.

The address on September 13 was delivered by Professor Eugène Rambert, whose death on November 21, 1886, removes a veteran member of the Swiss Alpine Club and one of its most ardent supporters.

The number of members at the close of August 1885 was 2,607, and the expenditure exceeded the receipts by 196 francs.

The case attached to this volume contains, besides the maps, a panorama from the S. peak of the Trugberg by Herr Simon, a view in the Morea, and others. J. S.

Kritisches Verzeichniss der Gesammtliteratur über die Berner Alpen, speciell über den centralen Theil des Finsteraarhorn-Massivs. Von Edmund von Fellenberg. (Bern : 1886. 1 franc 50 cents.)

Repertorium und Ortsregister für die Jahrbücher i. bis xx. des Schweizerischen Alpenclubs, zusammengestellt von Otto von Bülow. (Bern : 1886.)

Herr von Fellenberg has published another part of his historical monograph on the peaks and passes of the Bernese Oberland. This time it is the bibliography of his subject, specially as regards the central part of the chain. Starting with Tschudi's work of 1538 he brings his text down to the number of the 'Intelligenzblatt der Stadt Bern' of September 28, 1885, which contains the description of the new way up the Jungfrau. This pamphlet of little more than 50 pages is most admirably done, one specially useful feature being that every paper on the district in question which has appeared in any periodical publication is separately noted, so that many sources are now laid open without the trouble of searching countless files. For instance, the references to our own columns fill no less than six entire pages. We look forward with eagerness to the publication of the second main part of the monograph containing the history of the peaks and passes east of the Lötschenlücke. Herr von Fellenberg's knowledge is so extensive and minute, and his zeal so untiring, that his book when complete will rank among the most prized treasures of our Alpine libraries.

Herr von Bülow, too, by his labour of love has deserved well of all readers of Alpine literature. His index to the Swiss Jahrbuch has been executed with the greatest care and pains, and is an invaluable key to an invaluable store of information. It is divided into four main divisions. The first or 'scientific' deals with the articles on natural sciences, anthropology, orography, cartography, history, legend, art, forestry, and etymology. The second is the principal, for it contains an index to all the ascents described in the Jahrbuch classified under the various mountain groups, to the full

understanding of which a key map greatly contributes. This division covers nearly 100 pages of the 188 of the whole work. Part 3 has to do with club matters, photography, accidents, guides, huts, reviews, and periodicals; while Part 4 (perhaps the most generally useful) is an alphabetically arranged index of places, peaks, and passes, each accompanied by its references, the whole forming a most thorough and masterly piece of work. The trouble of finding out whether a supposed new route has already been made is now reduced to a minimum. The book is published as an *Extrabeilage* to this year's *Jahrbuch* (No. XXI.), but may doubtless be obtained separately. It is indispensable to every Alpine library, whether it does or does not contain a set of the *Jahrbuch*. We offer Herr von Bülow our most hearty thanks for his pains and trouble, and we are quite sure that all who use his admirable index will be filled with gratitude for the toil and loss of temper which his work will spare them, and with amazement at the patience and hard labour which its compilation must have cost him.

Annuaire du Club Alpin Français. 12ème Année. 1885. (Paris.)

If the 1885 'Annuaire' contained but one of the articles it now includes, it would be one of the most important volumes of the series. This is the paper which stands first, and which is an exhaustive monograph on the great peak of the Meije in Dauphiné, worthy to rank side by side with that on the Ecrins published in the 'Annuaire' of 1882. It is due to the pen of M. Georges Leser, who has himself made the ascent (after one unsuccessful attempt, in which the party were beaten back after reaching the Glacier Carré—that is, after all the chief difficulties of the climb had been overcome), and who has been aided by those best acquainted with the peak, especially by M. Claude Verne for all relating to the W. ridge, and to the great couloir on the N.W. side which he overcame in 1885. The result is that we have an authentic account of all the attempts on and ascents of the peak, by whatever route, Herr Otto Zsigmondy contributing an original account of his ascent by the Eastern ridge. A specially useful chapter is the minute description of the usual route by the Southern face, the key to which, we believe, is the change in the geological character of the mountain and the different lie of the strata. The paper is lavishly illustrated, the view of the Meije from the La Grave side of the Brèche being a good reproduction of a marvellous photograph by M. Charpenay of Grenoble, while in another 'phototypie' of the climbers at La Bérarde taken on August 5, 1885, we have the group of the brothers Zsigmondy and Dr. Schulz, one of whom was destined to lose his life on the Meije next day. Last but not least is the map of the district between the Col de la Lauze and the Col des Ecrins (on a scale of 1:100,000), constructed on the basis of his own observations by M. Henry Duhamel, and forming the continuation of his previous map (Ecrins to Col du Sélé) in the 'Annuaire' of 1882. It is (especially in its second revised form) marvellously accurate and extremely clear, being the first detailed map of the real topography of this district, which is so faultily represented on the French Government map. The

map is worthy of the paper which it accompanies, the two together forming one of the most important original contributions to a little-known corner of the Alps which have been published for many years. Ten successful ascents of the highest peak had been made by the end of 1885, on all of which, save two made without guides, and one on which the Almers were the leaders, the Gaspards of St. Christophe have been the chief guides. To these one other must be added, made last summer by a young English officer of the 19th Hussars, Lieut. Swan, to whom we owe a paper in this volume mentioned below. Gaspard père for the first time, we believe, visited the great Swiss peaks in 1885 with MM. Brulle and Bazillac, in the course of a remarkable journey, the narrative of which is rather unfairly banished to the small type articles at the end of the 'Annuaire.' The party ascended the Southern Aiguille d'Arves, Dent Parrachée, Dôme de l'Arpont, Dôme de Chasseforêt, Grande Casse, Grand Paradis, Mont Blanc by the Aiguille Grise route, the Western Dru, the Matterhorn, and Dent Blanche. We are sorry to see that M. Brulle complains that he was much annoyed by the Zermatt guides because he brought a strange guide with him. The only other article on Dauphiné is a full description of the ascent of the Southern Aiguille d'Arves by M. Dulong de Rosnay, who appears (and rightly) to have been much impressed by the ascent, the characteristic feature of which he holds to be the 'sensation continuelle du vide, sensation propre, il est vrai, à toutes les grandes ascensions de rochers, mais plus marquée encore à l'Aiguille Méridionale d'Arves, en raison de sa conformation particulièrement verticale.' We would point out to the writer that he is wrong in believing that Emile Pic climbed a rock face on this Aiguille which old Christian Almer had tried in vain without his shoes. Almer's slope is far to the right, overhanging the Col de Gros Jean, and quite close to the edge overlooking Rieublanc; while Pic's is just a little to the right of the curious cleft which is the only means of access yet discovered to the upper part of the mountain.

In Provence we have an account of the ascent of Caoume, a hill north of Toulon, interesting as the scene (in the spring of 1787) of de Saussure's scientific observations near the level of the sea, before making his famous ascent of Mont Blanc. M. Bartoli contributes a very pleasant narrative of his exploration in January 1885 of the Montagnes des Maures (between Hyères and Fréjus), including a visit to La Garde Freinet, the head-quarters of the band of Saracen marauders who spread thence into the Maritime Alps, Eastern Switzerland,* and possibly the valley of Saas. In the Tarentaise, we have only one paper describing an ascent of the Chasseforêt near Pralognan, and a descent in thick mist to Termignon, a very awkward adventure; for, as the Dôme is situated in the very centre of the great snowfield of the Glacier de la Vanoise, nothing is easier than to lose the right direction, and wander for hours round and round.

The two papers on the Mont Blanc district are of considerable importance. M. Vignon, among other climbs, describes his ascent of the

* *Alpine Journal*, vol. ix. p. 254 sqq., vol. x. p. 269.

Aiguille de Bionnassay, which is believed not to have been climbed since the first ascent, in 1865, by Mr. Grove and his companions, the thrilling circumstances of which have been fully narrated in the second volume of this Journal. M. Vignon, starting from the southern Miage glacier, reached the foot of the peak by way of a tangled icefall, but found no difficulty in reaching the summit of the peak by the S.E. flank from the snowfield above the glacier. An attempt to descend by the E. arête failed, so the party, remounting to the summit, regained the foot by their previous route at 12.45, and thence followed Mr. Reilly's 1864 route along the great ridge at the head of the Bionnassay glacier to the Dôme du Gôûter, reached in *two hours and a half* only from the foot of the Aiguille de Bionnassay. Time did not allow of the ascent of Mont Blanc, so the party descended to Chamonix. It is curious that though, in the early days of the Alpine Club, the ascent of Mont Blanc from the Col de Miage was one of the chief problems sought to be solved, and that the whole way, from one point to the other, has been made in different bits, yet (we believe we are right in stating the case) no one starting from the Col de Miage has reached the summit of Mont Blanc the same day. M. H. Dunod gives us a very interesting account of the month he spent in besieging the Aiguille des Charmoz (which he very inconveniently calls the Aig. de Grépon),* always seeing yet not being able to reach Mr. Mummery's ice-axe, till a final attempt on September 2, 1885 (the party starting from the Montanvers Hôtel), was crowned with success, the final peak being reached from the S.W. (not by the N. arête, as stated by a slip), a new route, and one very nearly identical (if we mistake not) with that tried by Messrs. Balfour in 1881.†

Switzerland receives scant attention this year from the C.A.F., M. de Gorloff's wanderings among the well-known valleys of South Valais being the only contribution, besides M. Brulle's paper mentioned above; while the schoolboys of Arcueil explored the Ortelier group and the Dolomites, a district as yet but little known to French travellers. The Pyrenees, as usual, receive much attention. Count R. de Bouillé sends a monograph on the Pic du Midi d'Ossau, M. de Saint Saud continues the tale of his explorations (interfered with now and again by stern officials) on the Spanish side of the chain. Mr. Swan describes the first ascent of the Pic d'Astazou from the North, but seems to use the terms 'glacier' and 'couloir' as meaning the same thing. The third sheet of M. Schrader's great map of the Central Pyrenees is issued with this year's 'Annuaire,' one half of the map being thus now published. M. Martel sends a paper on certain remarkable features in Auvergne and the Cévennes, in the course of which he corrects his previous account of the curious rock formation called Montpellier le Vieux from a supposed resemblance to the town of Montpellier, and gives a detailed ground plan of the whole. There are also a number of papers dealing with semi-Alpine or even

* See *Alpine Journal*, vol. x. pp. 420, 500.

† *Ibid.* p. 397.

non-Alpine matters, on Malta, the Lebanon and the Anti-Lebanon, Formosa, Tonkin and the Pescadores Islands, and the volcanoes of Java, each interesting in their way, but for a full account of which we have unluckily no space.

Among the scientific articles, the first part of Monsieur E. Levasseur's essay on the grouping of the different ranges and 'massifs' of the Alps is placed at the head. We are much disappointed to find that it entirely consists of a long monotonous list of peaks and passes, impossible to wade through, and only to be understood by means of a good map, for which the very rough and confused outline given with the paper is not a sufficient substitute. M. Levasseur has had his paper revised by various specialists, and consequently his names and heights are very accurately given, though on p. 390 the Aiguille de Chambeyron is said wrongly to be on the frontier, whereas the Brec of the same name (3,388 mètres) is not mentioned, though it really is on the main ridge; and on p. 419 the misprint of 4,061 mètres attributed to the highest peak of the Fletschhorn by the Dufour map (that sheet of the Siegfried Atlas is not yet published) is copied without comment, though the peak is thus made far higher than the Weissmies (4,031), the reverse being really the case. M. Levasseur, too (p. 389), repeats the old story that S. Vêran is the highest village in Europe (2,010 mètres), ignoring entirely Avérole (2,035), in the upper Maurienne, and Jof or Juf (2,042), in the Aversthal (Graubünden). The author reckons as belonging to the Western Alps all South of a line passing through Aosta, the Col Ferret, and Martigny; while the Central Alps are cut off from the Eastern by the valleys of the Inn, Eisach, and Adige. The rest of the Central Alps and the Eastern Alps will be described in the 1886 'Annuaire.'

To our mind M. Schrader's orographical sketch of the Pyrenees is on a far more scientific and useful plan than M. Levasseur's, giving the main features of the chain (the key to which is to be found on the Spanish side), and not overwhelming us with masses of details. M. Schrader considers that on the French side of the chain it is the secondary topography which prevails, the whole slope being a descending one, and having been much worn away by weather and maritime influences; whereas the Pyrenees are prolonged on the side of Spain, where the primary topography is well preserved, and where, despite first appearances, an almost geometrical regularity prevails in each of the distinct groups or 'redressements' at a very sharp angle to the imaginary axis of the main ridge. This paper deserves careful study.

M. Vézian continues his studies on the origin of mountains, describing this year the different 'types orographiques' which are the result of the expansion of the liquid central fire of the earth. These are three in number.

a. *Chaînes à axe anticlinal*, such as the Mont Blanc range.

β. *Chaînes à strates diversement infléchies*, such as all the ranges to the north of the main ridge of the Alps.

γ. *Chaînes à plateaux*, like the Dolomites and the Mont Perdu.

M. Briot prints a proposal for improving the material condition of the Alpine populations. Much has been done for the lower hills by the rigorous enforcement of the laws as to replanting them with trees

and regulating the mountain torrents; but for the land at a higher elevation, M. Briot is anxious that the peasants should devote themselves to the production of that for which the land is best adapted—in this case not corn, but milk and cheese—their endeavours to be supported by societies in each commune, prepared to lend money for the furthering of these objects, these societies being under supervision of the Central Government and its delegates, in which category the French Alpine Club ought to take a prominent place. The State has power to enforce replanting, but the improvement of pastures has been left entirely to individuals, and little or nothing has been done. There is a good paper by M. de Pouvoirville on the requisites which combine to make some mountains excellent positions for studying and observing others, whereas some (despite their present popularity) are quite unfitted for this purpose. M. Durier has had the ingenious idea of observing the motion of glaciers by means of photographs taken every year; and thus from 1884–5, he finds that the Glacier du Bois was stationary, whereas the Bossons advanced rapidly. The reasons assigned for this difference in the behaviour of two glaciers in the same valley we must leave more qualified persons to consider, but the reproductions of M. Tairraz's photographs illustrate M. Durier's main thesis in a very admirable way.

M. Duhamel prints in full his paper on M. Cordier's ice-axe, read before the Turin Congress in 1885. The second bit of the axe was only found in 1884, seven years after the accident, and M. Duhamel is of opinion that it was by reason of its faulty construction (on a very commonly adopted model) that it broke and M. Cordier's life was sacrificed. Several diagrams help us to understand this paper, which should be read by everyone who uses an ice-axe—that is to say, by all climbers.

There is a curious paper on the well-known Inverness dog 'Clyde,' who is in the habit of begging for pennies, with which he buys cakes for his own personal consumption. He attracted the attention of some French visitors, and several letters from Mr. Lindsay, his owner, are printed, giving a full account of his remarkable sagacity and the way in which he took to this habit.

On the whole, this 'Annuaire' is interesting throughout, though the Meije paper is the only one of first-class importance. The French Club seems to be in a flourishing condition, for on May 10, 1886, it numbered no fewer than 5,321 members.

Section Lyonnaise du Club Alpin Français. Cinquième Bulletin.
(Lyons: 1886.)

The Lyons section of the C.A.F. has collected in a modest volume the papers read before it since the publication of its last Bulletin. No fewer than three deal with the Bernese Oberland, one being by the Abbé Chifflet, who was killed in 1885 on the Courtes, and of whose life and Alpine travels a sympathetic sketch is given by one of his old colleagues. Other papers describe an ascent of Mont Blanc by the Aiguille Grise route, and a journey from Algiers to Kairwan. There are in fact but two papers of what we may call local interest. Lieut.-

Col. Arvers gives a very curious account of the origin of the 'Alpine Companies' in France, and of the doings of his own battalion (the 12th) in the Dauphiné and Savoy mountains. This company, not content with making easy passes (it has crossed over 200), crossed in 1884 the glacier Col Lombard from La Grave to Rieublanc, and attempted in 1885 the ascent of the Rochebrune above Briançon, no less than 30 men reaching the summit together. In honour of this the battalion has been made an honorary member of the section. M. Joseph Mathieu describes his ascent of the Meije in terms which seem to show that, contrary to general experience in such matters, the difficulties of the climb have not been exaggerated, and are not much diminished even by the increased experience of the Gaspards, gained on their repeated ascents.

The section numbers now 576 members, and its library includes 426 separate works or albums of photographs. It is well known that the 'Lyonnais' are among the most active and enterprising climbers in France.

Annuaire de la Société des Touristes du Dauphiné. Vol. xi. 1885. (Grenoble.)

This volume of the Dauphiné Society is unusually interesting. The chief article is that by M. Paul Moisson, on the tangled ranges south of Dormillouse, near the sources of the Drac. His two days' exploration between Orcières and the Durance valley form a fitting supplement to his previous labours in the Champoléon, and we trust that he will some day embody in a separate work all the information which he has gathered together on these districts; for, lying as they do to the south of the main mass of the Dauphiné Alps, it is rarely visited and still more rarely described. Another article deals with the Chaillol and Parières ranges, which were thoroughly explored (in the steps of Messrs. Gardiner and Pilkington, of MM. Bayard and Moisson) during several of the brightest days of that most brilliant summer of 1885. M. Ferrand relates his ascent of the Puy Gris, near Allevard, which has a legendary but apparently wholly undeserved reputation for excessive difficulty, if not inaccessibility.

M. Chabrand gives us a most interesting description of the valley of the Queyras, from Guillestre to Abriès, and of the Traversette. It is full of the historical details which we expect from the historian of the district, and brings out, too, the beauty of the views of the Viso and Dauphiné groups. The author, however, makes a slip in saying that S. Vêran is the highest commune in France, as we believe that that doubtful advantage belongs to Avérole, in the Maurienne, near Bessans, the chief winter hamlet of which lies at no less a height than 2,035 mètres (= 6,677 feet). On page 167, too, M. Chabrand should not say that the Cols Girardin, Albert, and La Noire lead from Ceillac to the Ubaye valley and to Molines, for though the former statement is true of the two first named passes, the lofty and desolate Col La Noire leads from S. Vêran to the Ubaye valley, and not one of the three leads to Molines from Ceillac, though one does lead from Molines to the Ubaye valley. But these are mere slips in a very valuable article.

A very interesting account is given of the development of the Société

des Touristes during the first ten years of its existence. Starting early in 1875 with ten members, and a budget at the end of that year of 3,890 francs, it numbered in March, 1885, 639 members, and its annual income was no less than 7,499 francs, despite the low subscription of 10 francs asked from each member. Few local societies can boast of such a rapid growth, and none, we are inclined to believe, can show a greater amount of work done, the little inn at La Bérarde being now quite ready for occupation. One is at first surprised to find in the transactions of a local society a long account of the Turin International Alpine Congress of 1885; but this is explained by the fact that Dauphiné and Piedmont have always been closely associated, and that the S.T.D. is now recognised as one of the more important Alpine associations. The 'Revue Alpine' of the principal expeditions made in the Dauphiné Alps during the season of 1885 is as well done as usual, though by a slip of the pen the conquest of the Meije by the Eastern ridge is dated August 4 instead of July 26.

Bollettino del Club Alpino Italiano per l'anno 1885, No. 52.
(Candeletti, Turin.)

This latest number of the 'Bollettino' opens with an appeal addressed to the members of the C.A.I. by the editors, who find that suitable articles relating to climbing are more and more rarely offered to them (probably because of the competition of the monthly 'Rivista Alpina'), and feel bound to apologise for the historical and geological character of the present volume. They point out that even in well-known districts there are nooks and corners which well deserve, for various reasons, to be explored and described; they engage that in future scientific articles shall not be so strictly technical as they have been, but should appeal rather to those interested in the Alps than to scientific specialists; and they express a hope that the descriptive and personal part of papers on mountain ascents will be kept subordinate to that portion which studies the topography and general aspect of the district in question. No doubt there is a dearth everywhere of 'climbing' articles, and we can thoroughly sympathise with the Italian editors while endorsing their suggestions and promises; but in this case the dearth seems to be an unavoidable result of 'running' two periodical publications, unless one is confined to business matters and to short notes (like the 'New Expeditions' in these pages), which can later be expanded and published in the more important periodical. Certain, however, it is that the current 'Bollettino' is singularly poor in any articles which describe climbs or explorations made by Italian mountaineers. Yet several of the papers therein contained are very valuable, as summaries of what has been done, thus showing those who have less leisure for the study of Alpine literature than for climbing what exactly remains to be explored and ascended in order to complete the monograph of any particular district.

The honours of the year undoubtedly belong to Signor Luigi Vaccarone, who is an explorer both of mountains and of the literature of mountains—a combination rarely found, and of which there is perhaps no more brilliant example than the case of that eminent Alpine writer.

The first of his two articles is an attempt to perform a Herculean task—a classified list of the first ascents and passages (with names of travellers and guides, dates, and references to original sources) of all peaks and passes on the main chain of the Alps from the Monte Viso to the Simplon. Only those who have ever tried to draw up such a list can fully realise the enormous difficulties, at once personal, historical, topographical, and bibliographical, of his undertaking. After a very careful examination of Signor Vaccarone's 'Statistica' we can say with confidence that as a first draft it is most wonderfully full and complete. We say as a first draft, for the article is unpagged; and as the author modestly admits that there must be many mistakes and omissions, and asks for corrections, we presume that a revised edition will be published in a future number of the 'Bollettino.' Such a list, it is clear, can only be made perfect by the aid of those specially acquainted with the various districts, and in this case we find that it is best done in those parts of the Alps which Signor Vaccarone has himself explored. We very much regret, however, to find that the honours of the first ascent of the Aiguille du Géant are given to the Signori Sella, who, though undoubtedly discoverers of the right way up the highest peak, themselves reached only the lower of the two pinnacles which constitute the summit. It will be necessary to define the limits of the different districts into which the Alps are divided for the purpose of this list, as each district has its own numeration, *e.g.* the Cottians, 76 entries; the Graians, 123; the Paradis group, 88; the Mont Blanc district, 102; the Pennine Alps (from the Great S. Bernard to the S. Théodule), 133; the Monte Rosa group, 108; and for the same reason it would be very convenient to have at the end an alphabetical index showing on what page any particular peak or pass is to be found. Then, too, some of the districts require a good deal of rearranging, as the method followed is not always the same; and the whole list requires very careful and minute revision, so as to ensure perfect accuracy, as well of statements of facts as of printing foreign names. Signor Vaccarone, too, is inconsistent; for, while stating that his list is confined to the main chain of the Alps, he includes the Tarentaise and outlying parts of the Pennine range, and omits entirely the great mass of the Dauphiné Alps—a system which, besides the disadvantage of inconsistency, seriously impairs the usefulness of the list as a key to all the Alps from the Viso to the Simplon. But despite these drawbacks, most of which are inevitable in the first draft of such a laborious and extensive undertaking, we have no hesitation in saying that Signor Vaccarone's list is an advance on anything of the kind hitherto attempted, and that in its definitive shape it will reflect the greatest honour both on the author for his untiring zeal, and on his Club, which has so well seconded his endeavours.

It is well known to all who take an interest in the exploration of the South-Western Alps that that part of the main Alpine chain which lies between the Levanna and the Ciamerella offers the greatest difficulties in the way of topography and of nomenclature, for the French and Italian surveys differ fundamentally on both points. Then, too, the chain has been mainly explored from the French side, as it is far more

easy of access than the Italian side, which, however, is far more conspicuous in all views. Signor Vaccarone, with the help of several friends well acquainted with the district (specially Signor Corra), has written an admirable account of it, illustrated by two very clear lithographs of the Italian slope. The knotty topographical questions are discussed and (what is more) settled, while the historical account of the exploration of the chain leaves nothing to be desired. By the publication of this paper Signor Vaccarone has rendered a great service to Alpine explorers, who must necessarily consult it if in search of information on a very tangled part of the Alps. It might perhaps have been well to avoid an excessive multiplication of names for insignificant pinnacles and useless passes. Then, too, Signor Vaccarone follows the new Italian map in holding that the Punta di Mezenile (3,446 mètres) is higher than the Cima del Martellot or Roc du Mulinet (3,437 mètres), farther North. The French map assigns to these peaks the heights of 3,458 and 3,469 mètres respectively; and the writer of these lines (who has been up both summits) is confident that the French map far more nearly represents the truth than the Italian survey.

These two articles of Signor Vaccarone's throw the rest of the contents of the 'Bollettino' into the shade. Perhaps the most generally interesting of the other articles is that by Signor Grober on the southern and south-western faces of the highest peak of Monte Rosa, which is illustrated by the reproduction of a splendid photograph taken by Signor Vittorio Sella from the Lysjoch. The article itself, however, is full of the grossest mistakes and most careless omissions. It is implied that Messrs. Pendlebury and Taylor's ascent of Monte Rosa from the East was made before M. Déchy's expedition of 1871 up the south-western face, though of course the former expedition took place on July 22, 1872. Again, the honour of first climbing up the south-west face (*i.e.* of reaching the *Sattel* from that side) is given to M. de Déchy because of his ascent of July 29, 1871. Now, M. de Déchy no doubt made this expedition quite independently, but if Signor Grober had consulted his note in our pages* he would have seen that the Editor there pointed out that M. de Déchy's route was but a slight and unimportant variation of the route taken by Messrs. K. E. Digby and R. B. Heathcote in 1868.† Further, Signor Grober complains that Mr. Hulton's notes‡ of his ascent up the south face on August 20, 1874, are vague and do not indicate his precise route; though if he had studied them more carefully he would have seen that Mr. Hulton took the very route (up the rocky ridge coming straight down from the highest peak) which Signor Grober is inclined to think would be the best way for those approaching the peak from the Lysjoch. Finally, we are told that Messrs. Conway and Scriven in 1877 were the first to climb to the highest peak from the Zumstein or Grenz Sattel. Now it must be remembered that *part* of this route (*viz.* from the Ost Spitze to the Höchste Spitze) had been made in 1872 by Messrs. Pendlebury

* *Alpine Journal*, vol. vii. p. 154.

† *Ibid.* vol. iv. pp. 157-8.

‡ *Ibid.* vol. vii. p. 107.

and Taylor coming up from Macugnaga, while the *entire* route was first made on August 31, 1874, by Messrs. F. P. Barlow and G. W. Prothero, * of which expedition Mr. Conway and his companions were ignorant when they made their climb, as no account had been published of it.† An article containing such gross mistakes should never have been allowed to appear in the 'Bollettino.' It gives, however, some useful details as to the Club huts on the south side of the Lysjoch; one (the Capanna Gnifetti) is only two hours from the summit of the pass, and another will next summer be built on the pass itself, thus greatly facilitating the ascent of Monte Rosa from the South.

Among the other contents of the 'Bollettino' we may mention a very full account of the International Alpine Congress at Turin in 1885 (with the full report of M. Faraut's odd claim that S. Bernard of Menthon was the inventor of Club huts). Signor Brentari sends a chapter from his 'Guida Storico-Alpina del Cadore' on the topography and Alpine history of the group of the Zwölferkofel and Elferkofel, lying between the Sextenthal and Auronzo; Signor Brusoni a paper (apparently based on his 'Guida alle Prealpi Comasche') describing the Zuccone di Campelli and Zucco di Desio, in the hill country near Lecco; while Signor Cederna contributes a very well-executed monograph (quite a model in every way) of the Val Fontana, a glen which opens out to the North between Tirano and Sondrio in the Adda valley, and of which the chief summit is the Pizzo Scalino (3,329 mètres).

There are also several valuable geological articles, which we have no space to examine in detail. Two of these are due to the pen of Signor F. Sacco—one is a study of the Eocene beds in the upper part of the valley of the Stura di Cuneo, which attain the height of no less than 2,955 mètres in the Mont Enchastraye, south of the great pass of the Col de l'Argentière or della Maddalena; the other reports the results of a careful examination (specially from the paleontological side) of the peat-beds near Avigliana. Signor Cacciamali summarises his geological explorations in the Abruzzi, and Signor F. Virgilio examines the causes which have produced the curious rock basins known as 'Marmites des Géants' (such as the Gletschergarten at Luzern), holding, in opposition to several great names, but for apparently excellent practical reasons based on his own observations, that they are not due to the action on the rock beneath the glacier of 'moulins' formed by the streams on the surface of glaciers, but are rather the effect of subglacial streams carrying sand and stones which have dug out these curious hollows.

On the whole, we may say that in the 'Bollettino' of 1885 the articles of Signor Vaccarone are by far the most important for climbers, and that their excellence is in strong contrast to the very slovenly and careless paper on the highest Italian mountain by Signor Grober, who has presumed too much on the ignorance of his readers, whether at the Varallo Congress last summer or elsewhere.

* *Alpine Journal*, vol. viii. p. 400.

† Mr. Conway's *Zermatt Pocket Book*, p. 52.

Guida Storico-Alpino di Bassano, Sette Comuni, &c.
(O. Brentari, Bassano, 1885. 5 francs.)

This pocket volume of 300 pages is another instance of the thoroughness and capacity of Italians as writers of local handbooks. 'Amor patriæ' in the less extensive sense the modern Italian sometimes gives to 'patria' can hardly instigate to more useful work. And what an idea is given of the resources of the printers of a small country town by the mechanical production! The variety and clearness of types, the excellence of the stitchers' and binders' work, are such as we often desire without seeing in the products of capitals. One want, however, there is—better district maps based on the New Italian Survey. The extract from an ancient German map is not adequate.

A great deal of the country described is of course sub-alpine. Bassano itself is full of interest, and its situation at the opening of the great gorge of the Brenta, whose waters reflect Italian towers and are spanned by a Swiss-like covered bridge, the successor to that which gave its name to the da Ponte family—the local painters—is highly picturesque.

For mountain lovers it is the starting-point for Primiero, which lies outside the scope of the present volume, and also for nearer excursions to Possagno, Canova's birthplace, and to Asolo, the site of the Castle of Caterina Cornaro, Queen of Cyprus, and to the *Sette Comuni*.

These curious colonies, where a dialect resembling eleventh-century German is still spoken, occupy a high plateau in the hills between Bassano and Trent. The scenery is interesting, the views extensive and beautiful, so that on all accounts the district is worth a visit from strangers. The highest summit is the Cima Dodici (7,758 feet), which is said on one side to offer a sharp scramble. The inhabitants propose to make themselves accessible by a mountain railroad. Anyone who wishes to see them before they achieve this project will find all possible information, practical, picturesque, and scientific, in Signor Brentari's very carefully and thoroughly worked-out 'Guida.'

D. W. F.

Führer durch das Dachsteingebirge und die angrenzenden Gebiete des Salzkammergutes und Ennstales. Von Georg Geyer. (R. Lechner, Vienna. 1886. 1s. 8d.)

Here once more we have a guide book based not only on the acquaintance of the author with the literature relating to this group, but also on his personal explorations carried on in these ranges for the space of ten years, winter and summer alike. As Herr Geyer is a geologist as well as an experienced climber he is naturally the person best fitted to compile a guide to the Dachstein. It is written tersely but clearly. It has too the merit, possessed by few guide books, of meeting the demands of the ardent mountaineer as well as those of the ordinary tourist. The difficult climbs, such as the Thorstein from the Windlegerscharte, are as accurately and fully described as the easy stroll. Herr Geyer considers that by not adding to his book any illustrations or poor district maps he has conferred a benefit on his readers, and we heartily endorse his opinion. The book has been

published by the 'Section Austria' of the German Alpine Club (now presided over by our hon. member, Herr von Moisisovics), which deserves much credit for its enterprise and has earned the thanks of all visitors to the Eastern Alps. A. LORRIA.

Zur Vergletscherung der Deutschen Alpen, von Dr. Albrecht Penck. (Separat-Abdruck aus Leopoldina. Heft xxi. Halle, 1885.)

In this memoir the author continues his researches * on the glaciation of the German Alps, dealing especially with the following points:—

(1) Owing to the great accumulation of ice on the central range in the Tyrol, some of that on the northern side of the watershed, in at least one instance, passed over to the south. This, in the case of the Pfitscher Joch, is proved by the occurrence of erratics of serpentine on the southern side of the pass, which must have been brought from masses which only outcrop on the north.

(2) The author investigates the relative velocity of different parts of an ancient ice-stream by considering the area of its section at a series of stations along its course. If the glacier obeys the ordinary laws of fluid motion, then, unless the augmentation of area of its section, due to the enlargement of the valley, keeps pace with the augmentation of its volume, due to the influx of tributaries, the velocity of the ice must be increased. Selecting the glacier which took its rise in the Oetzthal as an example, Dr. Penck shows that if v be the mean velocity of the three principal tributaries in the upper part of the valley, then the velocities of the main stream near Sölden, at the mouth of the Oetzthal, on the Seefeldler pass, and at Scharnitz, were respectively $1.6v$, $2.5v$, $3.6v$, and $5.4v$, a result which appears to be of considerable interest. In the course of this investigation Dr. Penck calls attention to the very obvious fact, sometimes, however, overlooked, that by the lowering of the snow-line an augmentation of the glacier is produced, which bears a high proportion to the vertical decrement of the snow-line, because the augmentation of the glacier depends on the area of its feeding ground, which is largely affected by a small change in the height of the snow-line. It would therefore follow that in a time of increasing cold—that is, with a sinking snow-line—the advance of the glaciers would not only be rapid, but also accelerated as it proceeded, while the reverse would occur at a period of increasing warmth; i.e. the glaciers would retreat at first rapidly, then more slowly, from their limit of maximum extension.

The latter part of the memoir is occupied with some of the evidence in favour of an interglacial period. Instances are given—similar to those which have been brought forward by the glacial geologists of Switzerland—of the occurrence of gravels and clays overlying one set of moraine deposits and underlying another. T. G. B.

Guides-Diamant Joanne: Dauphiné et Savoie. Par P. Joanne. (Hachette, 1886. 6 francs.)

This volume of a very handy series has been well brought up to date. Route 20 bis on the 'Massif du Pelvoux' is an admirable sketch

* See *Alpine Journal*, xi. 190.

of the peaks and passes in the central Dauphiné Alps, and is exceedingly accurate and full. But why is the Ailefroide, the third in height of the group, absolutely ignored on p. 218? Why (p. 224) is the old Rochers Rouge route up the Pelvoux recommended, and no mention made of the way by the 'Couloir Tuckett,' which is both shorter in point of time, and also avoids the rather risky crossing of the Glacier du Clot de l'Homme? The Sommet des Rouies is easily ascended in three-quarters of an hour from the Col des Rouies (not two hours, as stated on p. 224), and in the description of the Col du Sellar (p. 223) a couloir seems to be identified with a glacier. A panorama from the Tête de la Maye, near La Bérarde, is given, and the map (p. 214) is one of the best and clearest and most accurate that we have ever seen, but unluckily it does not always agree with the text. When they differ, stick to the map. We are surprised, too, that no description is given of the Chaillol and Sirac ranges, though they appear all right on the map. Still the section is admirably done, and is in strong contrast to the slovenly way in which the Tarentaise has been treated. The many excursions round Pralognan, a most splendid centre for excursions, are almost wholly ignored, the Chasseforêt being marked on the map only, and the description of the Grande Casse (which offers no serious difficulties) being of the most alarmist nature. Tignes, too, is slurred over. For all the passes into Italy we are provokingly referred to the large Guide Joanne, while the Col de la Leisse is described (p. 409) as a most difficult and dangerous pass, though it is certainly not much more so than its neighbour the Vanoise or the Great Scheidegg. We may point out that the 'autels sculptés' (p. 329) in the chapel of S. Antoine at Bessans are non-existent, though the very curious frescoes are rapidly going to ruin, and that the Aiguille du Fruit, near Brides les Bains, far from being accessible in 10½ hrs. from Les Allues, has, we believe, not yet been completely ascended. The Tarentaise section requires to be revised and extended before it can be considered satisfactory.

Guide au Midi de la France. Second revised and enlarged edition.
(Leipzig: Bädeler, 1886. 8s.)

We had occasion some time ago* to criticise very unfavourably the section on the 'Alpes Françaises' section in the first edition of this guide. It is now our pleasant duty to announce that the second edition has been completely remodelled, and is very full and accurate. The detailed and excellent descriptions of all the excursions, big and little, round Pralognan, Tignes, and Bonneval is in striking contrast to the Guide Diamant noticed above, which gives no separate map of the Tarentaise and Maurienne glaciers, while Bädeler's is very well done indeed. It is reduced from the French and Italian ordnance maps, and is admirably clear even in the tangled chain between the Levanna and the Roche Melon, generally miserably represented. Indeed, Bädeler's guide is now the only one which is thoroughly up to date in this part of the Alps (which resembles Switzerland in so many points), and may be thoroughly trusted for its accuracy and conciseness. The same remarks

* *Alpine Journal*, vol. xii. pp. 281-3.

apply to the revised Dauphiné section, which now forms an ideal pocket guide to the district, compiled by one who is evidently well acquainted with the country. But why is the Aillefroide assigned a height of 3,854 mètres only, that being the height of its lowest point, and why (once more) is the Rochers Rouges route up the Pelvoux the only one mentioned? The Aig. d'Olan is certainly not 'très difficile et dangereuse,' though that may be true of the Pic of the same name, and the N. Aig. d'Arve is not so black as it is painted. The map, too, of the Pelvoux group is good, though not quite equal to that in the Guide Diamant. The two pages given to the Queyras are well and carefully done, and the single one given to S. Martin Lantosque and the Col de Tenda is good as far as it goes.

Altogether this new edition is an enormous advance on its predecessor, and shows Herr Bädeler's enterprise and desire to make this volume as complete, as accurate, and as useful as the others of the series which have earned for him a world-wide reputation. No one visiting the French Alps should fail to carry this volume with him, for it embodies all the most recent information as to inns, guides, ascents, &c.

Séchet et Poulard : Fantaisie Alpestre. Dessins et texte par Emile Guigues. (Grenoble: Emile Baratier. 10 francs.)

From the earliest days of the Alpine Club the question of provisions has been the subject of as many heated discussions as porters, and indeed the two are not unconnected. Of late there have been signs of a deplorable schism in this matter. We have on the one side the ascetic school of climbers, whose aim is to carry as small an amount of food and drink with them as possible, and to consume even less; while the members of the rival camp—we may call them, merely for the sake of distinction, the gourmands—revel at incredible heights on potted lobster, followed by plum pudding (cold, in newspaper), and washed down by Bouvier *frappé*. No doubt, as on all such burning or rather freezing questions, there is much to be said on both sides; but the ascetic climbers should take warning by the sad fall of M. Séchet, while the gourmands may well tremble lest they may some day experience the sad state of body and mind of M. Poulard after that terrible expedition through 'La Combe.' These two heroes are great friends, and M. Guigues paints for us with pen and pencil the unexpected results of their rival theories on a joint climb. In the preliminary discussion before starting M. Poulard annihilates M. Séchet with a syllogism of irresistible force—from the gourmand point of view. 'Que l'homme d'esprit seul sait manger—Brillat-Savarin dixit: qu'un clubiste est un homme d'esprit (M. Séchet n'en doute pas, je pense?): ergo, qu'une excursion est une occasion unique et obligatoire pour faire un bon dîner.' Poor M. Séchet indeed is reduced to ejaculations: 'L'Annuaire et les Bulletins du Club Alpin ne sont plus que des catalogues de menus! le turbot du Sénat romain est ressuscité! Oh! horreur! Catastrophe inévitable! Oh! décadence! L'Alpinisme devenant une machine à confectionner des hommes gras. Horreur! horreur!' We eagerly follow the two friends in their cat hunt together with Ursule the *bonne*, nor

can anything but a perusal of M. Guigues' text and a study of his really admirable sketches convey a full idea of the agonies poor M. Poulard underwent, first at the hands of Jacques, the philosophising guide, and then of the fair Madame Beautreillis. But the turning-point of the whole tale is that fearful short cut through 'La Combe' (Jacques and the mule with provisions being sent on ahead), the perils of which were certainly calculated to try all systems to the utmost. It is indeed the immediate cause of the exchange of theories, each at once carried into practice, for M. Poulard, worn out with fatigue and thirst, makes over all those dainties packed up by Ursule to his friend Séchot. Séchot on his side finds the 'gourmand' system so excellent that in his excitement he carries it to an excess and begins to make a speech at an imaginary meeting of the Club Alpin: 'Mes chers collègues! . . . l'émotion . . . je suis heureux . . . j'apprécie . . . c'était vraiment succulent!' which shows how his principles had been given up once and for all. Long before M. Poulard had propounded to Séchot a terrible dilemma: 'Apprends, ô Séchot, que le Club Alpin sera gourmand ou qu'il ne sera pas.' Now, when the former ascetic is calling on the peasants to hold him up, as his gourmandise has told sadly on him, Jacques, that lanky, cool, Yankee of a Jacques draws the moral: "Pour quant à ça vous parlez d'or, comme disait l'autre, l'homme doit vivre pour mang. . . ." "Jacques, Jacques," interrompt lamentablement M. Poulard, "Jacques, que dis-tu, malheureux?" "Comme disait l'autre, mossieu!"

M. Guigues' sketches are the main part of this volume, and for the most part are very cleverly done and well produced by a curious process which in some cases seems at first sight very smudgy. But none of them pleases us more than the two pages devoted to the representation of M. Poulard's rapt countenance and varied expressions of delight as Ursule is running over the contents of the carefully-packed basket of provisions meant for his consumption, but which led to M. Séchot's fall.

Champéry et le Val d'Illicz: histoire et description. Par Arthur de Claparède. (Geneva: Georg, 1886. 2 francs 50 centimes.)

This is a handy and useful guide to a valley which is becoming a favourite haunt of those who find that the middle heights suit them better than the lofty inns perched high among the glaciers. After some tall talk about the exceeding beauty of the mountain pastures in this valley and the striking appearance of the natives, which causes the writer to hint—without, so far as we know, any ground—at a non-Burgundian origin, M. de Claparède settles down to his work in a business-like fashion, and gives us an excellent chapter (acknowledging his obligations to M. Charles Le Fort, of Geneva) on the history of the valley. This is very interesting, for the Val d'Illicz formed part of the possessions of the Dukes of Savoy in the Valais, the Upper Valais being ruled by the Bishop of Sion. It was not till 1536 that great part of the Chablais (including the Val d'Illicz) submitted voluntarily to the 'dixains' of the Upper Valais and to the Bishop of Sion, who ruled them till the revolution of 1798, though it was only in 1815

that the Valais became a full member of the Swiss Confederation. The Illiez men seem to have been always noted for their Conservatism, in all the troubles from 1839 to 1844 valiantly supporting the anti-Liberal party, and later the Sonderbund in the war of 1847. We join with the author in longing for the day when the rich muniment-room of the Abbey of S. Maurice will be thrown open to historical students, for its contents are sure to throw great light on the early history of the Lower Valais. It is curious, in view of the long supremacy of the Upper Valais, to note that the present Bishop of Sion, Monseigneur Jardinier (for thirty years curé of Trois Torrents, in the Val d'Illiez), is the first native of the Lower Valais who has been elected bishop since 1203. We wonder, too, how many of M. de Claparède's readers were previously aware that the Val d'Illiez is called in the old documents 'Vallis Illiaca inferior,' to distinguish it from the 'Vallis Illiaca superior,' now known as the Lötschenthal?

A general description of the valley and of the village of Champéry (not forgetting its 'Temperance Café') is followed by chapters on the strolls, excursions, and ascents which are to be made in the neighbourhood. As far as we can judge, these are well done, the paths being minutely described; but the higher peaks (save the Dent du Midi) are rather too generally described. A map, too, is urgently called for, for it is not every one who has the great Federal map in its earlier (Dufour) or later (Siegfried) form at hand. M. de Claparède, too, should have added to his list of maps sheet 160 *bis* ('Annecy') of the French ordnance map for the French side of the passes leading from Champéry, though we are sorry to see that the higher passes are dismissed in a very cursory way, indeed with a couple of lines each. On the whole, that part of the book for which mountaineers would consult it is its weakest point, the easier walks being described at very disproportionate length. A useful chapter on the botany of the district and the tariff for guides complete this prettily got up handbook, which will doubtless become—as, on the whole, it deserves to be—the inseparable companion of any one visiting Champéry or any other part of the Val d'Illiez, whether for a long or for a short stay. It may, perhaps, be of use to point out that since the book was issued the last unclimbed summit of the Dent du Midi has been conquered. This is the Doigt (3,220 mètres), just East of the highest peak, which was ascended from the Salanfè side on July 3, 1886, by MM. A. Wagnon (the only traveller who has been on each of the six teeth of the Dent du Midi) and P. Beaumont with three Salvan guides.*

Das Ober-Engadin. Von M. Caviezel. 5th edition, enlarged.
(Chur: Hitz and Hail. 5 francs.)

This useful local guide makes its reappearance in an enlarged form, and is revised up to the latest date by the author, himself a resident in Pontresina. It is enriched by a sheet of Dufour's map and by a circular list of the peaks seen from Piz Languard. A few illustrations

* *Echo des Alpes*, 1886, pp. 161-7.

(of hôtels!) are scattered here and there. Considerable space is given to botanical, geological, and zoological subjects, but we miss a summary of the political and constitutional history of the valley. As a guide for climbers it leaves much to be desired; the higher excursions have not been made by the author and are described in exaggerated language (e.g. the Disgrazia 'zählt zu den gefährlichsten Touren'), while there are other inaccuracies (e.g. two different dates given for the first ascent of the Monte Rosso di Scerscen). We have been unable to find any list of Club huts on either side of the chain. Yet this booklet has one feature which ought to interest climbers and which we have never before seen in a guide book—a list of the great peaks of the district with the names of the first ascenders and the date of the ascent.

This guide book can be specially recommended to those who wish to make expeditions of moderate length and difficulty, for the various easy walks round the different villages are fully described. We are glad too to see that Herr Caviezel has abandoned any attempt to classify and docket the inns, a task sure to exasperate both host and guest.

PROCEEDINGS OF THE ALPINE CLUB.

THE Annual General Meeting was held in the Club Rooms on Tuesday, December 14, 1886, at 8.30 P.M. Mr. G. E. FOSTER (Vice-President) occupied the chair, and explained that he did so in the absence of Mr. F. C. GROVE, President of the Club, who was unfortunately detained by illness in the Canary Islands.

MESSRS. C. J. ARKLE, A. J. BUTLER, J. GURNEY FOWLER, H. W. HOLDER, J. A. LUTTMAN JOHNSON, W. LARDEN, J. VAN RENSSELAER, G. A. SMITH, A. G. TOPHAM, and A. C. TOSSWILL were balloted for and elected members of the Club.

THE CHAIRMAN announced that Mr. F. F. Tuckett had supplemented his gift of a year ago by another specimen of glacier-polished rock from Norway, which he presented to the Club. Mr. Coolidge had also presented a large and valuable collection of over 220 rock specimens from mountain-tops in the South-Western Alps, which had been arranged by Professor Bonney.

THE CHAIRMAN (for the Committee) nominated Mr. C. T. Dent for the office of President for the ensuing year, in the room of Mr. F. C. Grove, whose term of office had expired. Mr. NICHOLS seconded the nomination.

Mr. EUSTACE HULTON demanded that the election should be by ballot.

Professor POLLOCK interpreted Rule II. to mean that there should be a ballot only in case of a contested election. He submitted that it was irregular to demand a ballot, and that, as it was impossible then to nominate any other candidate, the last day for nomination having been a week previously, and as only one candidate had then been nominated, it was the duty of the Chairman to declare that candidate, Mr. Dent, duly elected.

Mr. HULTON asked the Chairman to put the question 'aye or no, stating that his subsequent course would be according to the result.

The CHAIRMAN said that, though Professor Pollock's contention was strictly and legally correct, he would decide to interpret the rule in accordance with the complimentary practice which had held good ever since the Club was founded, and therefore asked for a show of hands in favour of Mr. Dent. Sixty-two voted for and thirteen against.

Mr. HULTON again demanded a ballot, but the CHAIRMAN said that Mr. Hulton must submit to his ruling, and that Mr. Dent was duly elected.

Mr. DENT, who was received with acclamation, briefly returned thanks.

On the motion of the CHAIRMAN, seconded by Mr. HORACE WALKER, Messrs. M. Holzmann and C. Pilkington were unanimously elected Vice-Presidents in place of Messrs. C. T. Dent and G. E. Foster, whose terms of office had expired. Messrs. W. M. Conway and H. Seymour King, M.P., were elected as new members of Committee *vice* Messrs. J. O. Maund and J. W. Hartley, who retire by rotation; the Honorary Secretary and the other members of Committee were also re-elected.

On the suggestion of Mr. C. E. MATHEWS, it was decided that the names of the extra members of Committee should be printed in the Club list with the ordinary members of Committee.

The CHAIRMAN then called upon Mr. W. M. CONWAY to read a paper on the Nadelgrat and Südlenzspitze, which he had brought forward at very short notice, in place of the address which was to have been delivered by the President. Mr. Conway illustrated his address by some of Mrs. Main's photographs.

After some remarks by Messrs. W. MATHEWS, COOLIDGE, and C. E. MATHEWS, to which Mr. Conway replied, a vote of thanks was, on the motion of the Chairman, accorded to Mr. Conway for his paper, after which the proceedings terminated.

The annual Winter Dinner took place on Wednesday, December 15, at Willis's Rooms, 138 members and their friends sitting down to dinner.

The Picture Exhibition (of which a notice will be found on page 175) was held at Willis's Rooms during the afternoon of the same day.

Errata in the last Number.

- P. 121, line 8 from the bottom, *after* 'Oberland' *insert* 'proper.'
 ,, 122, ,, 1, *for* '35' *read* '45.'
 ,, " " 3, ,, 'S.W.' *read* 'S.E.'
 ,, 130, ,, 29, ,, 'W. Percy Thomas' *read* 'Percy W. Thomas.'

THE
ALPINE JOURNAL.

MAY 1887.

(No. 96.)

ADDRESS TO THE ALPINE CLUB.

By F. C. GROVE.

(Read before the Alpine Club, February 1, 1887.)

‘**H**OW many hours a day did you do lessons?’ said Alice to the Mock Turtle.

‘Ten hours the first day,’ answered the other; ‘nine the next, and so on.’

‘What a curious plan!’ exclaimed Alice.

‘That’s the reason they’re called lessons,’ the Gryphon remarked. ‘Because they lessen from day to day.’

‘Then the eleventh day must have been a holiday?’ observed the heroine, after some thought.

‘Of course it was,’ said the Mock Turtle.

‘And how did you manage on the twelfth?’ Alice went on eagerly.

‘That’s enough about lessons,’ the Gryphon interrupted in a very decided tone; ‘tell her something about games now.’

Well, I am very much in the position of the Mock Turtle without having a Gryphon to aid me with his singular facility in non-committal answer; and without having any games whatever to offer the Alpine Club, I have to explain what happened on the twelfth day. It so fell out that my accession to the office in which I have been but a very weak successor to those who preceded me, occurred at a time which, figuratively speaking, corresponded with the eleventh day above indicated. The Alpine Club after many years of hard work, which had lessened latterly, not on account of any want of zeal in the students but because there was less and less for their faculties to work upon, gave itself a whole holiday; and now a rule which it were impious to dis-

obey, because it rests on inspiration and on nothing else in particular that anyone knows of, compels the expiring, or rather the now defunct, president to give an account of what occurred during and after the whole holiday.

That is his plain duty and he must perform it. I can best illustrate the position by reference to a well-known American story. 'And then,' said the narrator of a hunting legend, 'the beaver climbed a tree.' 'But a beaver can't climb a tree,' observed a matter-of-fact listener. 'By gosh, sir,' said the other, 'he *had* to climb a tree! the dog was crowding him so.' As with that beaver so with the late president of the Alpine Club. He is called upon to do what at first sight seems impossible, but a dog in the shape of duty crowds him, and he must strive to perform the task. Grand repose is something noble to contemplate, but a retrospect of repose does not seem likely to be a stirring and varied history, such as the Alpine Club justly expects, mindful of what two former presidents have done. An attempt must be made to deal with the subject. Happily the repose, though tolerably complete at times, was broken at others, and at the end there was some promise of a splendid awakening.

It will be remembered that my predecessor, in the admirable address which he delivered at the conclusion of his term of office, spoke sympathetically of the want of new land to work upon from which the Club was suffering during his time. After his retirement from the post he had filled so well, things got yet worse, and the Club was at its wits' end—having taken twenty-six years to accomplish the journey. The members were very much in the position of junior members of the Bar, or of the ten cream-coloured horses who drag a moderately sized car. They were full of zeal and energy, but there was nothing for them to bring their zeal and energy to bear upon. It was found that even the wrong routes up mountains were not infinite in number, and that there was a limit to the signification of the word pass, although undoubtedly it is one of the widest in the English language. These painful truths forced themselves upon unwilling minds, and, all undesired, rest was taken; but to some men rest is impossible, and I need not say that to such men the Alpine Club has hitherto been the most congenial of all places of union, and that we number not a few of them amongst our members. Repose being to them a thing abhorrent, they determined to find work, and much study, much burning of the midnight Edison, much micro-

scopic observation of the map, enabled them to discover some places in the Alps which had not yet become haunts for invalids, or strolling grounds for interesting young ladies.

There exists in this much-abused universe, where men seem to take singular pleasure in proving to Providence the mistakes made in creating them, a peculiarly detestable class called statistis or statisticians—I know not which word is the more ugly and unmouthable—who are always informing us of facts which no rational being can by any possibility care a dump to know. One of them, for instance, will take some unpleasant land and inform us how many inhabitants there are to a square mile there; he might just as well tell us how many fleas there are to a square yard of Dauphiné blanket. But there is one sort of work to which a member of this order might have applied himself with advantage to his kind, or at least to those few amongst them who stand in the front ranks. A statist might have told us, in the beginning of 1884, how many expeditions there were to any given peak or ridge. The result, I believe, would have surprised the world, and yet more would it have surprised the world to know that, despite this *opus reticulatum*, there were some tracks not yet macadamised, some points unreached, and one considerable peak still unimpressed by man's foot or any other portion of his frame.

Such was the case, however, in the beginning of 1884. Work was found on the eleventh, and even on the twelfth day there was not complete repose. That indomitable mountaineer who, after labouring in the Alps in the summer, finds time, despite his grave avocations, to edit with such admirable knowledge and thoroughness the literary work of those who are willing to tell of their rambles, discovered in 1884 a variety of new expeditions in the Cottian and Graian districts, and in the Dauphiné. In company with the younger Almer, Mr. Coolidge scaled heights and crossed passes showing, as he had often done before, his extraordinary powers of endurance and his minute topographical knowledge. In the same year some variations of established routes were made; and it is worthy of note that men were not alone in energetically seeking work to do in the Alps despite the fact that they had been born a trifle late, and that two remarkable expeditions were made by ladies; one ascended a new peak considerably more than 13,000 feet high, which, overshadowed by the Weisshorn, seems strangely

enough to have escaped notice; and the other made a new and very difficult descent of a great mountain without 'giving a chance,' to borrow a phrase from cricket—gravitation in this case representing the field. It is pleasant to speak of these achievements, and latterly there has been another considerable one, as a lady has ascended the Aiguille du Dru; so let it be hoped that ladies will continue to climb the Alps. With women, as with men, it has been found that the best of the sex take very naturally to mountaineering, and if they come in increased numbers to the snow-line, their presence will, I am sure, be welcomed by all whose welcome they will care for.

In a field which it is to be feared ladies will not reach for some time, as it is considerably further than the Alps, and somewhat trying when reached, a great mountaineering feat was performed in 1884; but though the mountaineer who accomplished it is a member of our Club, we cannot unfortunately call him a countryman. Herr Maurice de Déchy's ascent of Adai Choch will always rank high amongst mountain expeditions, as will also his recent ascent of Elbruz, made in circumstances of extraordinary difficulty. Of another feat of a very different kind it is, if possible, still more pleasant to speak, as in this case the successful performer was an Englishman. In 1884 Mr. Dent, now our president, showed us that it was still possible to write a most interesting and amusing book about the Alps, to discourse with infinite wit and humour on what must be admitted to be a well-worn theme, and to convince a world which still remained sceptical how much the finer faculties are stimulated by the laughing gas which is inhaled by the ardent above the snow-line.

The season of 1885 was, to use the language of retail trade, decidedly quiet, but Mr. Coolidge continued his systematic exploration of the Cottian Alps, the Dauphiné, and the Graians; and Mr. Seymour King ascended in brilliant style a real indisputable peak which, marvellous to say, had never previously given accommodation to any traveller's person. His climb of the Aiguille Blanche de Peuteret, which he described so well in the pages of the 'Alpine Journal,' will, perhaps, be remembered in the same way that the last shot in a great action is remembered. Otherwise there is not much to speak of so far as regards our own Club. Some remarkable expeditions, without guides, were made by members of the Austrian Alpine Club, but I prefer to allude to these merely on account of the terrible accident in which

their young and daring leader lost his life. It is impossible, however, in a paper of this kind—a retrospect of three years' work on the Alps—altogether to pass over the subject of accidents, and I much regret to say that with regard to them I differ from some of my predecessors whose superior qualifications for judging the question I desire to acknowledge in no conventional speech. I believe myself that accidents are not altogether avoidable, and that they will continue to occur in the Alps. Whenever mishaps come there is an attempt, invariably a very skilful and honest attempt, to show that they might have been avoided, and the necessary inference from all these able arguments is, that there should be no catastrophes on the great mountains. Does not forty years' experience prove the contrary? It has been shown again and again that accidents should not happen, need not happen, cannot happen, if proper precautions are taken; but nevertheless accidents continue to happen, and in 1885 again there was unhappily no lack of them. I think it best to look facts in the face, and while fully recognising that many misfortunes in the Alps have been due to heedlessness and incompetence, to admit that perfect freedom from misfortune cannot be hoped for. Seeing what has happened during these many years, can it be maintained that mountaineering not only ought to be, but may be, rendered absolutely free from danger? The danger is very remote where there are due knowledge and skill, but it is, to say the least, doubtful whether it can be completely eliminated. Perhaps no really great sport can be quite free from peril. Is this to be lamented? One may well hesitate before answering the question in the affirmative.*

With 1886 came the uprising after rest that I have spoken of. Our senior vice-president and our honorary secretary betook themselves to the Caucasus, and another member of the Club would, to my certain knowledge, have gone had not his companion at the last moment been detained in England, and very naturally he did not care for a solitary expedition in those lonely valleys. The two who went did passing well amid trials which would not only have taxed the patience of Job, but would have caused a jury to return a verdict of justifiable homicide if he had killed his comforters. They camped on the borders of the great ice-valley of Djanga, and then, with mighty un-

* When writing this passage I was unaware that an Australian poet had expressed the same idea much more aptly.

trodden peaks close to them, they had, during the chronic black tempest of the Caucasus, to pass many days in forced inaction, with no consolation save each other's speech and the thought that they were doing their duty, and setting a good example to their fellow-creatures living in ease and dryness in the cities of the plain. At last, however, the celestial water-service got out of order for a brief space, and during some abnormal fine weather they were victorious on that extremely beautiful mountain Tau Tetruld or Totonal; but they narrowly escaped the honour of being martyrs to their cause, for had it not been for their own remarkable presence of mind and that of their guides, they might have 'become subjective,' to use Auguste Comte's expression, on the tremendous slopes which rise above the great glacier which forms the base of that strange Djanga valley. Of their expeditions, however, you will hear from themselves,* and therefore I will say no more of them save to congratulate them and the Alpine Club on what they have achieved.

And now, like the Vicar of Bray, I turn, a change of view being desirable, from that which is past to that which is to come, or which may come, to what is hidden for us in what has long been known with somewhat realistic imagery as the womb of the future. A German once said of a distinguished Englishman that he had a great behind but no before—a noble past but no future. Have we too nothing but a great collective past to look back upon? Have we done all that can be done, and is there no prospect of serene and happy labour for us in days to come? The question is more easily put than answered, a peculiarity which it shares with other questions. There are some, not cynics or unbelievers, who think that the Alpine Club, having fulfilled its mission and, unlike any other English institution, having been imitated all over Europe, must now rest content with its many laurel garlands, and enjoy a green old age, until it is wafted to that peaceful haven where the troubles of corporate existence are over; the limbo, in fact, where good clubs go to when they die—a place which has hitherto escaped the exploration even of the Society for Psychical Research. By the younger and more energetic members of our Club these views are, I much fear, regarded as painful but indisputable signs of premature old age. I am far from

* Mr. Dent's paper on the 'Ascent of Tau Tetruld' was read at the next meeting of the Club, and Mr. Donkin's, on the journey generally, at the May meeting.

agreeing with this; but, on the other hand, though I at one time rather inclined to the despised ideas, I have now entirely abandoned my opinion, and am inclined to think that there is a great future for the Club if only they will do what is recognised as the first duty of all mountaineers, and look facts in the face. Let me be pardoned for using the expression a second time, but we must look them in the face, however much we may desire to avert our gaze. There is no doubt that, for those who are not content with routes of great beauty, but undoubtedly well worn, who desire big expeditions savouring of novelty, something satisfying a desire for enterprise, the Alps are absolutely played out. They are frequented, and will, I believe, continue to be largely frequented, by men who are content to gratify their love for mountain scenery and for the finest form of bodily exercise, and do not desire untrodden ground, and do not despise expeditions because they have often been made before. But for those who have a more fervent ambition, the Alps are no longer a fitting place. They are exhausted and have been exhausted for long, and they are not now a field for men who are perhaps the least exhausted of any to be found on the face of the earth. It is with the Alpine Club as it is with an Indian tribe. The young braves want work. At present our most capable members find themselves, if they do not care for a form of mountaineering in which dulness alternates with unnecessary danger, condemned to sit with, so to speak, their legs folded in hopeless inaction. Any amount of mental and physical vigour but no vent for it. The case is a sad one. Here as elsewhere we find ourselves confronted with the grave question—what is to become of the unemployed?

Well, I think I can answer it so far as we are concerned. Politicians must deal with its other aspects; but to make my response intelligible I must ask you to take a look back, or rather to contemplate at once the past and the present. How extraordinary does it seem, when we think of the year 1857, to contrast the facilities for world travel which then existed with those that exist now? There is no need to give you a long comparative list of deep-sea steamers and railways in distant lands; but it may broadly be said, with no fear of exaggeration, that in that year a journey to South Italy was thought nearly as big a business as a journey to East India is now; and as facilities for going far have increased, so has it become cheaper and cheaper. It has been said, I believe with substantial

truth, that to take a long voyage on board a great ocean steamer is a very fairly economical way of passing a holiday. World travel, in fact, is no longer reserved for a few rich and adventurous men, but has become a recognised pursuit. Not long ago I met abroad an American lady who had herself been to most places, and asked me if I was fond of travel? I answered, that in a humble way I was. Europe or globe-trotting? she simply inquired. Well, now that globe-trotting has become so common, is the Alpine Club to ignore it and lag behind? We must not look upon the St. Gotthard, the Chemin de Fer de l'Est, and the Paris-Genève or Paris-Lausanne, as the sole roads to happiness. There are other routes leading to ranges higher than the Alps, and it is now comparatively easy and not enormously expensive to traverse them; and along these lines our younger and more daring members must thread their way. Your president, gentlemen, and Mr. Donkin, both very busy men, have, as I have pointed out, shown you what can be done, and I trust that their example will be followed and enlarged upon, and that other members, with more time at their disposal, will not only seek the snows of the Caucasus, but will make more degrees longitude, east or west, as the case may be. The time has now arrived when it is absolutely necessary to break fresh ground; and unless this is done we shall cease to be the leading body of mountaineers; and have to be content with an honoured but effete old age, leading to extinction. As the youthful fox learns from the thoughtful and benevolent cub-hunter—we must go far afield or perish.

THE ASCENT OF TETNULD TAU.*

BY CLINTON DENT (*President*).

(Read before the Alpine Club, March 1, 1887.)

A STRONG inclination to follow good advice has ever actuated me, and it has been matter for constant regret that opportunities for so doing seldom if ever occurred. No great while ago I put myself in a literary position to receive much wise counsel; and I got it. Being desirous, when engaged on this paper, to profit by lessons inculcated, and anxious to frame something that might be worthy of perusal, I

* I preserve the title under which the paper was read before the Club for the reasons mentioned below (p. 232, footnote).

studied what the critics had been pleased to say. Such perplexity was the result, that the idea of describing the present expedition at all was well-nigh abandoned. Had I, for example, been too serious, or too prone to levity? One estimable counsellor said plainly that I had been guilty of attempting to make too many jokes. That was in a paper of ecclesiastical tendencies. Another hinted that he was unable to see any. That was in a journal published north of the Tweed. Evidently the wished-for opportunity had not arrived. There was no alternative, then, when advisers differed so materially, but to disregard them altogether, and to set forth a plain tale—a small chapter of our experiences in the Caucasus—in such language as naturally occurred, trusting to the indulgence and longsuffering of my readers.

As a dry biscuit is considered a proper prelude to the discussion of wine, so may I, perhaps, be pardoned if I make mention of one or two dry facts before discussing the main fare of this paper. It would seem presumptive to suppose that the members of the Alpine Club can have anything to learn about one of the finest mountain chains in the world, and I only desire to refresh the memories of my readers. The chain of the Caucasus, extending roughly from the Black Sea on the west to the Caspian on the east in one long spine, may be considered from the high mountaineering point of view to be limited by Mount Elbruz * at one end, and Kasbek at the other. This division is known as the Central Caucasus. Kasbek lies close to the great Dariel Pass, which is crossed by a military road connecting Vladikafkaz on the north with Tiflis on the south. The principal peaks are situated in the middle of the Central Caucasus, culminating in the great mass of Koschtan Tau (17,096 feet), which is second only to Elbruz in point of height. So far as I know, three peaks only of the entire chain, above fifteen thousand feet, had previously been ascended: viz., Elbruz by Mr. Grove's party, † Mr. Freshfield and others; Kasbek possibly by Prometheus, certainly by Mr. Freshfield ‡ and other climbers; and Adai-khokh by M. de Déchy. § In future years, when Europe has been rearranged, and wars and rumours of wars have ceased to be, M. de Déchy's rather sanguine expectations may be

* Known locally by the name of Minghi Tau. See Freshfield's *Central Caucasus*, p. 352.

† *Alpine Journal*, vol. vii. p. 113.

‡ *Central Caucasus*, p. 179.

§ *Alpine Journal*, vol. xii. pp. 91, 209.

realised, and the Caucasian snow-fields may become the regular haunt of the mountaineer. Then may the village of Bezingi, situated on the north side of the chain at the foot of these mighty giants, develop into a Grindelwald or Zermatt, and assume an importance which up to the present seems rather wanting. Giant hotels may rise, crowds of knickerbockered climbers may throng what represents its streets, and—last stage of development—cricket matches may be played on its central platz, the natives assembling to watch the local eleven contending against the champion team of all Urusbieh; this may happen, but there are few signs of it as yet.

On the evening of August 21 we picked our way along the Western Terek valley *en route* for Bezingi, a little anxious as to the possibility of discovering the hamlet before night-fall. No lights are ever to be seen in the villages, but certain signs raised our hopes and led us to believe that we were nearing civilisation, for the amount of garbage in the path increased at each step. Presently we stopped and were told that we had arrived. No village could be seen, however, but the path lay high, and the difficulty was easily explained. Bezingi is beautifully situated on a brown and barren slope, and is unpretending, even modest, in its nature. When the natives wanted in the old days to construct a house (there are no modern buildings) they cut out a large wedge-shaped piece of the side of the hill to save trouble, so that one wall consisted of the vertically cut soil. As the roofs were covered with turf, and their inclination was nearly uniform with the slope of the hill, the village was almost invisible from above.

The caravan consisted of Mr. Donkin and myself, the guides, Alexander Burgener, Basil Andenmatten, and an imbecile interpreter whose name ought scarcely to be mentioned in the same breath with those just given. A tattered boy, whose company we eschewed, as he was a perfect menagerie, and two other natives, completed the party. This boy, we trusted, was not such a fool as he looked, but Providence had not so ordained it. He was said to be possessed of great topographical acumen, but did not fulfil expectations. He certainly chose the right path once, while it was light, but guided us systematically wrong after sunset. Familiar now with the manners and customs of the country, we reined in at a promising-looking outhouse, and entering boldly, demanded, like the Knight of Snowdown,—

Rest and a guide, and food and fire.

Another stage had been reached, and at last we were within touch of the great snow mountains. The wearisome journeys across the steppe in the crawling trains were things of the past; our tossing on the Black Sea was forgotten; the toilsome ride in a baking sun, perched on the exquisite instruments of torture called saddles, were done with for the time. They are terrible things, those native saddles; but they are easy to ride on in the sense that it is difficult to fall off. The rider retains his position on the same principle that a clothes-peg sticks on an airing line. The horses are weedy, melancholy animals, afflicted with chronic thirst. They have little energy save when they shake themselves. This they do with astounding and distressing vigour. We were among a new, and to us a strange people: the motley crowds that we used to see at the railway stations, the Jews, Turks, Circassians, Mongrel—I mean Mingrelians, and others, were replaced by a purer race, that is, in point of descent only. One Caucasian village is very like another, and the manners and customs and characteristics of the natives in all the parts we visited were much the same. The general design of the house in which we were lodged was severe in its simplicity—*simplex munditiis*, unless the latter word implies cleanliness, as I have an inkling it does. It comprised one room, which was situated, rather literally, on the ground-floor. The front wall was of stone plastered over with mud, the chinks stopped up with anything that came handy. The floor was such as nature provided. The roof, constructed by the art of man, was of wood, decorated with prodigious festoons of cobwebs, and covered externally with turf. The single apartment in the town that boasted a glass window was reserved for the use—this I knew only by hearsay—of the ladies holding official positions in the prince's household, but ours was the next best. A hole, some three feet square, boarded up at night, admitted at once into our apartment air, light, and the perfume of an adjoining stable yard. The room was furnished with an uncompromising seat, an uncertain table, and the framework of a suspicious bed. We were hospitably received, and invited to seat ourselves. Mindful of our lengthy ride, we were impelled only by the strongest sense of the proffered courtesy to do so. We were given to understand that refreshments were being prepared, and while waiting composed ourselves in preparation for the ordeal which invariably awaits the traveller during his sojourn at a Caucasian village. There was no delay. Almost immediately on our arrival we held

the customary levée, a function for which there was no need to issue any invitations. In an astonishingly short period of time, considering the lateness of the hour, many natives straggled in and occupied standing positions near the door. Distinctions as to morning or evening dress were superfluous, for it is not customary, so far as I know, for the Caucasian to vary his apparel during the summer in any manner at any period of the twenty-four hours. For what conceivable purpose, indeed, should a Caucasian take off his clothes at any time. To wash? Bezingi has not been washed since the Deluge.

After a while our guests fell to talking, but not apparently, as a rule, about us. Presently some member of the party who was of an observant turn of mind caught sight of the nails in the guides' boots; thereupon he seized the foot and examined the phenomenon closely. This always led to infinite talk. One of us, perhaps, drew out a pocket knife, in order to prepare a toothpick from the back of the bed, or for some such purpose; and straightway a native would approach and gently take away the article for examination. They were judges of cutlery, and prone to try the edge of the blade on their beards. As these were sometimes our eating knives, this experimental practice gave us anxiety and subsequent trouble in stropping. Then entered five or six boys, who proceeded to places in the front row. They did not repay our observant study, as their sole occupation consisted in occasionally scratching themselves. Presently an under-strapper brought us freshly soured milk in a rather dirty wooden bowl, but the milk was excellent, and all our guests seemed pleased when we drank of it. Then an interval of silence. After this the heir presumptive to the principality entered, carrying a little table, the centre occupied by a flat dish containing a mixture of butter, cheese, meal, and sundries. This comprehensive dish was surrounded by triangular lumps of hot unleavened bread, set out as a housemaid arranges books on a drawing-room table. We did justice to the repast and inferred that we were expected to remain, for it is not easy to get up and walk immediately after eating hot unleavened bread. We, too, for a while were silent, and felt even as the young 'ooman on the next form but two, at the Brick Lane Branch of the United Grand Junction Ebenezer Temperance Association, appeared to the eyes of Mr. Weller the elder. The table was set aside, and the natives filtered out for a time. A remarkable visitor next called, without being announced. An unkempt man, so dirty

that he even surprised us by his state, entered and took up a good position. We made no sign, and he made no sign. For some ten minutes he stared at us in silence; then he examined an ice-axe closely. Whether he was pleased or not we were unable to tell. His features, from various causes, did not allow of mobility or expression. He put the axe back, and then fell to staring at us again. This time he took a twenty minutes' spell at it. Not a sound was heard to proceed from his lips. He spake no word. He spat once on the floor, but not in a manner calculated to give offence. Then he went away. The interview was over. Then the first set of guests came in again, but we felt that we had done our duty socially, and made ostentatious preparations for going to bed. This interested them. We took out certain paper packets and sprinkled the contents over the mattress. It was a pure formality, but we thought we would observe it. The natives became absorbed. 'Behold!' they seemed to say, 'these men scatter rare and costly powders on their couches before they go to rest. This is without doubt their barbaric method of offering up prayer.' A few minutes' talk and a little pushing on the part of the interpreter persuaded the guests to disperse; the door was bolted, the blinds drawn by the simple process of wedging a board into the window, and we were left to ourselves.

Of the natives that we met on this north side of the chain I may say at once that we found them simple, curious, dirty, and lazy. Their favourite and most habitual exercise is talking. They have no taste or aptitude for thieving. Like most other people, they are born liars. They have an undeniable talent for petty swindling. We were told afterwards that they have the character in the parts of being treacherous. This, I think, is far from the case. They are said not to value human life. So much the better for the traveller; people are not likely to take what they do not value.

Our business lay in other and higher regions, and we were not desirous of staying a moment longer than was necessary in the village. But, as in other parts of this strange country, the difficulty of getting into a given place is only equalled by that experienced in getting away from it again. In Russia there is usually difficulty in getting passports back from the police offices. In the Caucasus the delay is occasioned by the almost equally important article of food. The natives do not understand provisioning a party, and their views as to what are proper charges are unduly elastic, or rather extensile. The traveller, it is true, pays

nothing for the rest and refreshment which the native creed enjoins shall be supplied to him. There is something fine, dignified, and touching in such chivalrous hospitality; but the Caucasians, while preserving the traditional spirit, are a practical people, and of course a good deal of swindling has to be done in order to make a profit. We longed, too, for the solitude of the mountains, and for purer air than the village afforded. Let me do justice, however. In one respect Bezingi might teach a lesson to more civilised towns: its drains are never out of order. The natives get over the difficulty which so perplexes sanitary engineers in a manner masterly in its simplicity. There are no drains.

The whole of the next morning was spent in a prolonged wrangle with the horsemen, who wanted to be paid three days' return journey. This we held to be exorbitant, and signified the same in the usual manner. Thereupon the villagers refused us any assistance in carrying our tent and provisions up to our proposed camping-place. Our side was getting rather the worst of it, when two allies came to our aid—one, the prince, a fine old man of great stature, who wore habitually the air of mild melancholy commonly observed in those who consider themselves superior to the rest of their fellow-creatures; the other, a sturdy, good-tempered native, whom we conceived to be head of the village police. Unhappily they introduced new arguments, which required full discussion. Towards the afternoon the conversation, which had at times become very animated, slackened somewhat. A compromise had been effected. Our interpreter made us understand with a good deal of difficulty that we might have three horses and a donkey as beasts of transport. Such a cavalcade was utterly unnecessary, but there appeared to be no help for it, so we concluded the arrangement. Our interpreter generally mismanaged everything for us, and this transaction was but a type of many others conducted through his agency. Nearly all our troubles were either due to or aggravated by this imbecile, and in a strange country the importance of an interpreter can hardly be over-estimated. The creature could only communicate with such of the natives as were able to speak Russian, which few of them were able to do. He could speak a few words of French, which was the language in which we addressed our remarks at him, but when he consented to listen was almost incapable of understanding. He was not a good cook; indeed, his sole performance in this direction consisted in once boiling an egg wrong. There were moments when we were so

aggravated that we could have brained him, and were restrained only by the reflection that it was too complimentary a form of homicide. Let me dismiss him at once. When we parted from him at the end of our tour, he asked about five times more than he was entitled to. I feel bound, in justice to him, to add that he did not get it. He desired that his name should be mentioned to any of our friends who might be travelling in the Caucasus. Very well. His name was Constantine Tsoulai.

Having with much difficulty persuaded the natives to furnish us with a supply of bread, we started forth rather late in the afternoon, prepared to camp at nightfall wherever we might find ourselves. Going up the valley leading to the great Bezingi or Urban Glacier the natives selected the path on the true right of the river; it is infinitely better and easier, as we found in descending, to follow the route on the other side of the stream—that is, the true left. Progress was very slow. Although there were three horses, the natives insisted on piling all the luggage on the little donkey, an exceedingly intelligent, active, and vicious animal, with a preternaturally thin set of legs. In addition to the customary halts—about every quarter of an hour—for conversation, innumerable other delays were occasioned. Three or four times the small donkey was flattened down by his burden, and his little legs spread out sideways, so that he looked like a tortoise. This disaster, as might be supposed, set up much chatter; as if they thought that because they could talk the hind legs off a jackass, they could talk them on again. Then, all assisting, we propped the donkey up. The beast shook himself, one bit of string broke, and the whole of his bundles came off. We insisted, and the horses took each a small share of the baggage. Once or twice the natives all sat down, twisted up long wisps of grass, and stuffed them into their hide shoes. This is their way of putting on clean stockings. At sunset they all stopped once more and fell to praying; we were in a hurry, and did not precisely follow their example.

Between the Bezingi and Mishirgi Glaciers are some grass slopes, but to reach these we had to ford the torrent descending from the Mishirgi glacier. Here, for the first time, the horses were of use; the little donkey, which was christened 'Garlic,' on the ground that it was very strong, and that a very little of it went a very long way, carried very nearly the whole of the luggage, together with a native weighing about twelve stone who jumped on his back at the last moment,

across the river in the most extraordinary way. If the little animal had once lost its footing on the round loose boulders it must infallibly have been swept away, and there would have been an end of our mountaineering. We could have spared the native driver without regret, but we could not have spared our tent and provisions. It was almost dark by the time we reached the slopes. Having repelled, without much formality, a wild onslaught made by three dogs, the tent was hurriedly pitched and the blankets spread. Now the natives were quick enough; in a very few minutes a fire was lighted, and a sheep, for which we afterwards paid three shillings, was brought in, killed, and cut up with a rapidity and dexterity for which the Caucasians are famous. The prospects for the morrow seemed gloomy, for the clouds were low down on the mountains around. Still we were near them, and that was something. After a while the meat was pronounced to be ready. Our enjoyment of the repast was somewhat modified by the fact that the whole of the cooked meat had to be spread out inside the tent to cool, partly because the natives would have eaten it all if we had not kept it under observation, and partly because the threatening rain would have spoilt it. As an anatomical study the arrangement was interesting; but the presence of numerous steaming lumps of meat in the somewhat limited space afforded was not exactly appetising.

The morning gave little promise of improvement in the weather. The mists filled up the glacier valleys and cut off all view; the guides, therefore, were sent on to reconnoitre, and we decided to collect firewood and get everything in order for pushing further up later in the day; but about noon the rain began to fall so heavily that we decided to remain where we were, a plan of inaction which the natives seemed to appreciate and approve of at once. We had some opportunity during the day of noting that both the Mishirgi and the great Bezingi glaciers had shrunk considerably, but in this climate marks on the rocks from glacier action or from fracture preserve their fresh appearance for such an indefinite period that we could form no idea whether the retreat was recent or not. We were still in great doubt as to the exact situation of Koschtan Tau and Dych Tau, which peaks we judged would be our principal guides to the topography of the district. We had been told that the Russian official map was hopelessly misleading in all the region above the snow-line, and we certainly found it so; nor could we derive much information from the natives, not that they were unwilling

to impart what they knew, but a simple question as to the name of a given point would start the whole lot talking at once for an hour or more. We gathered, however, that they called the mountain which we hoped to recognise as Dych Tau by the name of Koschtan Tau, while to the peak marked Koschtan Tau in our map, and in nearly all other maps,* some of them gave the name of Dych Tau. As to the whereabouts of Tetnuld their ideas were vague, but all agreed as to the situation of Djanga.

To cut a long story short, it was not until August 24 that the weather cleared sufficiently to enable us to make out the geography. Burgener and I on that day went right up the Koschtan Tau glacier and identified points, but recognised, to our great disappointment, that the condition of the snow would render an attempt on the great peak of Koschtan Tau hopeless. Under better conditions there seemed two routes possible from this side, one from the little col north of the peak, following the northern arête the whole way. The amount of step-cutting that would have been necessary rendered this hopeless, and we estimated that, in the then condition of the mountain, twelve hours would have been the very least time required for the ascent alone from the col. The other route was more direct, and lay up a buttress of rock descending precipitously into the glacier at our feet; but the lower rocks were all covered with snow in the worst possible condition; while above, the huge glistening ice-slopes foretold interminable step-cutting. In such a season as that of last year Koschtan Tau would be impossible from this side. Burgener, indeed, was anxious to try the mountain, and we should doubtless have acceded to his wish had there been any chance of persuading the natives we had with us to carry up provisions and firewood to the foot of the col. There or thereabouts is the place for a bivouac. The cold at night was far too great to admit of our sleeping out without the tent.

As usual, the weather turned bad again after mid-day, and it was not till August 26 that we had fought our way up to the camping-place which we ought to have made days before, a little desperate, and determined to start for Tetnuld the next morning whatever the weather might be. The prospects were rather gloomy. We had, indeed, our tent;

* There is an obvious mistake in the map illustrating Mr. Freshfield's *Central Caucasus*. The peak there marked Koschtan Tau is probably Guluku.

without it we could not have remained up at this height—about 10,000 feet; the natives had refused to carry it, and Burgener had done so himself, in addition to the greater part of our other necessaries. The hunter alone had consented to come as far as the camp, but all the other natives had become mutinous. Our stock of provisions was low, and our mutton was nearly exhausted; we had persuaded, however, the head policeman to go back to Bezingi for further supplies, but we doubted exceedingly whether he would bring any up. The hunter had, however, killed a prodigious steinbock a day or two previously, and Burgener had been sent up with him to fetch the meat. The way up led over sharp loose stones, and it was curious to notice that the Swiss guide was completely outpaced. The hunter in his thin hide shoes stalked up silently and swiftly. The Caucasians can do almost anything in these shoes except go up steep snow-slopes or kick. Towards evening Burgener was seen returning, bearing the hinder limb of the defunct animal—an addition to our stores which was welcomed with enthusiasm. Now the steinbock is a very active beast, and this was a particularly fine and old specimen, its toughness was surprising. If the eater has patience and muscular power enough to chew down to the flavour, he will find it rather strong and rank: it makes good soup. Still we had nothing else in the shape of meat, and we went, so to speak, for two days on the hind leg of that steinbock. The natives will not eat the flesh of any animal unless the head has been cut off, and this is always done at the earliest opportunity. I noticed also that they always cut the tail off before skinning, possibly in deference to the Mahomedan injunctions, for, as may be learned from the Korân, much superstition attaches to the tail-bones. It is consequently difficult to get perfect skins in this country.

The morning of August 27 was dull and threatening when we got up at 3 A.M. for our long-deferred expedition. We made a hurried toilet after the native fashion, which consists, as is well known, in a shake and a scratch of the head. Reminiscences of civilisation deterred us from coming up to the scratch, but we did get ready in a brace of shakes. I doubt if in the Alps we should have started at all under such unfavourable conditions. The way led up by the moraine on the left bank of the Tetruld glacier, and across some loose rocks, which, without a lantern, were rather troublesome; our lanterns had been broken some time previously. We crossed a small glacier which takes its origin in a snow

basin lying north of our camp, and runs downward in a W.S.W. direction, terminating in the crevassed ice-fall of the Tetruld glacier. The crevasses were large and troublesome, and occasioned much delay. A wide sweep across a loose small-stoned slope brought us back to the névé. This would be the right route for the Adine Col, leading down to Mujal, perfectly simple in both sides. Bearing to the left across the upper snow-fields below the Adine Col, we made straight for the great snow wall lying right in front of us, the N.W. termination of the huge Koschtan Tau ridge. This gigantic wall extends continuously from the Adine Col to the east side of Koschtan Tau. Tetruld towers up from this wall, but Djanga and Koschtan Tau rise from it in more massive proportions. The height of the latter peak can best be appreciated from the Stuleveesk Pass lying S.E. of the range, about twenty-five miles distant. At the point we made for, the wall, measuring from the glacier, is perhaps a thousand feet in height. The snow was in fair order, and but few steps had to be made as we ascended, but here and there the crust of snow was plastered but thinly on the hard blue ice beneath. Above, an enormous cornice hung over on our side. By making a wide sweep to the right we were able to attack the cornice at a favourable spot, and about nine o'clock burst through the snow crust and felt the keener air on the top of the ridge. It was like an introduction to celebrities of whom we had heard much, but whose acquaintance we had never made. Close by, on the S., Tetruld towered above us. 'There is Elbruz,' said Burgener, pointing to the distant mass as excitedly as if it were a royal stag. The double-peaked Ushba nearer at hand was unmistakable. Far away over the green valleys of Suanetia rose the range of the Tau Leila group, and as we faced eastwards the great mass of Guluku reared up before us, while beyond again could be perceived the form of perhaps the finest mountain we had ever seen, the mighty Dych Tau. We turned southwards, and a startling vision met our gaze. A stately snow peak, half concealed and half revealed by wreaths of clouds, seemed to overtower. An immense ravine of snow and glacier intervened, but the northern arête of the newly seen peak could be just made out through the mist abutting on the great Djanga ridge. Was it Tetruld? Burgener would not have it. Tau Totonal it might be called, but in his opinion the peak we were making for was not only higher, but, further, was known as Tetruld wherever he had been on the south side of the chain. We were at the time

under the impression that Tetnuld was visible from the north side of the chain, and it was evident that the mountain which had so suddenly started into prominence could not possibly be seen from this side without ascending to a height sufficient to see over the Djanga ridge.* Even had time allowed, we should not have changed our plan of ascent. The peak in question should of course be attacked from the south side. It appeared accessible enough.†

* We saw the mountain subsequently in our attempted ascent of Guluku (p. 248, *infra*).

† It is well-nigh impossible to understand the topography from the Russian five-verst map. Tetnuld, indeed, is marked, and as far as can be judged the point corresponds with the peak we ascended, though the snow mountains are so indefinitely laid down that it is obviously wrong to draw any positive conclusion. The five-verst map is not easily obtainable, and I may note, therefore, that the map in Mr. Grove's book, *The Frosty Caucasus*, is founded on this official survey. As will be seen, Tetnuld (as we mark it provisionally) is a point on the same ridge as Djanga and Koschtan Tau. Only one peak is marked in the five-verst map (it is true that the name 'Mt. Gestola'—identical (?) with 'Geschola' referred to below—is marked, but no peak is indicated to correspond with the name), and only one in M. de Déchy's pamphlet, *La Svanétie Libre* (Budapest, 1886. Extrait du Bulletin de la Société de Géographie Hongroise).

The ten-verst Russian map, however, though utterly wrong in its delineation of the Koschtan Tau group generally, clearly marks two mountains close together. The northern point of the two is named Geschola Tau; the other, lying about 20° E. of S., is called Tetnuld Tau. Now, as will be seen from our map, Totonal is nearly S.W. of Tetnuld, being a little more W. than S. Still, the peaks indicated in the ten-verst map may correspond with our Tetnuld and Totonal. Our point, then, should—subject to this important correction in position—be known as Geschola Tau, and the western peak as Tetnuld Tau. But I cannot satisfy myself at all that these are really the mountains shown in our map. The fact is that the official surveys taken from the north side of the chain do not agree with those taken from the south side. Hence much of the confusion. Unquestionably there are two points lying close to each other. Mr. Freshfield marks, in the map illustrating his *Central Caucasus*, Totonal Tau only, but this peak is—quite correctly, as I think—shown as lying directly over the Adisch glacier and not on the main Djanga ridge. But Mr. Freshfield is strongly of opinion that Tetnuld Tau and Totonal Tau ought to be considered one and the same mountain. I fully admit that his views ought to carry much weight, but he has seen this district only from the south, while we explored it only on the north side. Herr G. Radde (*Berichte über die Biologisch-Geographischen Untersuchungen in den Kaukasusländern*, Tiflis, 1866) holds that Tetnuld and Totonal are identical. The peak is known also, he says, as Tötönar and

Woven in between all these peaks lay a wilderness of crevassed slopes, jagged rock ridges, and stretching glaciers, bewildering in their beauty and complexity. To see the wondrous sights that were crowded into those few minutes while we remained on the ridge, we would willingly have gone five times further and fared ten times worse. In high spirits we turned to the left (S.S.E.), and began our journey along the ridge which was to lead us to Tetnuld, ever keeping an eye on the snowy form of Totonal, and marvelling whether it would over top our peak or not. For a few steps, and for a few only, all went well. The snow was in good order on the ridge, but we had to leave this almost immediately and make S.W. in order to skirt the heights which still intervened between us and our peak. The ice began to change its character; two or three steps were cut with a few strokes of the axe, and then all went well again for a time. Then more steps, and a more ringing sound as the axe fell. We seemed, too, however we might press on, to make no impression on this first slope. Our doubt returned; the leader paused, drew up the rope, and bit at a fragment of ice as he gazed anxiously upwards over the face. No! we were on the right track and must stick to it if we would succeed. For an hour and a quarter we kept at it in silence, save for the constant ringing blows of the axe. Our courage gradually oozed out,

Tötöналд (p. 105). He mentions (pp. 102, 103) a 'fine snow mountain' situated east (p. 105) of Totonal by the name of Gatün-tau. Can this be the same as Geschola Tau? In some respects the description agrees. Both peaks are, apparently, seen from the south side of the chain plainly enough. I say 'apparently' because the statement is made chiefly on the authority of a photograph taken by M. de Déchy from above Mulakh, in Suanetia, and it is not certain that the two points seen in the view are those named Tetnuld and Totonal in our map. M. de Déchy has seen this part of the chain from both sides (though his explorations from Bezingi were chiefly confined to the Mishirgi glacier), and it will be interesting to hear if he confirms Burgener's views with regard to the nomenclature. Meanwhile, as there is conflict of opinion, I prefer to leave for the present the title of this paper as it originally stood, but shall be perfectly ready to adopt hereafter any nomenclature that may tend to simplify the rather puzzling topography. As will be seen further on, there is probably little difference between the heights of the two peaks. I cannot say which of the two is actually the higher. The map accompanying this paper will, I hope, make perfectly clear what peak we did actually ascend, and this after all is the most essential point. The difficulty will not be satisfactorily cleared up until some one has thoroughly explored the upper snow basins on the S. side of the Djanga ridge.

for when we got back to the ridge again at the Tetnuld Col,* we seemed to have made no progress at all. The top of the mountain far above was already swathed in cloud, and a distant storm on the south side was only too obvious. Another little peak was won before we looked about again, but the summit seemed no nearer. The exertion had begun to tell and the pace became slower. Some one remarked that he felt hungry, and we all thereupon realised our empty state, so we fortified ourselves for further efforts on an Ant-Alpine repast of steinbock, black bread a week old, and water—invigorating victuals and exhilarating drink rather appropriate to the treadmill kind of exercise demanded. It is under conditions such as these that strange diet tells on the climber; but even more trying and more weakening than the poor quality of the food was the want of sleep from which we had suffered for a good many nights. In the language of science, our vital force and nervous energy was becoming rather rapidly exhausted, or, to put it more colloquially and briefly, we were awfully done. Three hours more at least was the estimate, and meanwhile the weather was growing worse and worse. Reflecting that all points fall to him who knows how to wait and stick to it, we pressed on harder to escape from the dispiriting thoughts that suggested themselves, and almost of a sudden recognised that the last of the deceptive little tops had been left behind us, and that we were fighting our way up the final peak. Better still, Totonal, which for so long had seemed to tower above us, was fast sinking in importance, and there really seemed now, as we measured the peak with the clinometer between the intervals of step-cutting, to be little difference between the two points. The air was so warm and oppressive that we were able to dispense with gloves. One of the guides suffered from intense headache, but the rest of us, I fancy, felt only in much the same condition as a man does at the finish of a hard-run mile race. The clouds parted above us for a while, mysteriously, as it seemed, for there was no wind to move them; but we could only see the slope stretching upwards, and still upwards. Yet we could not be far off now. Again we halted for a few seconds, and as we glanced above we mentally took stock of our strength, for there was no question the pleasure had been laborious. Some one moved and we were all ready on the instant. To it once more, and to the very last victory was doubtful. True, the summit had seemed

* Marked by an × in the map.

close enough when the last break in the swirling clouds had enabled us to catch a glimpse of what still towered above ; but our experience of Swiss snow mountains was long enough to make us sceptical as to apparent tops, and possibly the Caucasian giants were as prone to deceive as the human pig-mies that crawled and burrowed at their bases.

Still anxious, still questioning success, we stepped on, and the pace increased as the doubt persisted. It is often said to be impossible, by those who don't try, to explain why the second ascent of a mountain always appears so much easier than the first ; some explanation may be found in the fact that on a virgin peak the uncertainty is really increasing during the whole time, and the climax comes in the last few seconds. Every step upward makes success more probable, and at the same time would make failure more disappointing. In fact, the only periods when we are morally certain of success on a new expedition are before the start and when victory is actually won. Still we could hardly believe that any insuperable obstacle would now turn us back ; yet all was new and uncertain, and the conditions of weather intensified the anxiety. The heavy stillness of the air seemed unnatural, and made the mind work quicker. The sensibility became so acute that if we ceased working and moving for a moment the silence around was unendurable and seemed to seize hold of us. A distant roll of thunder came almost as a relief. A step or two had to be cut, and the delay appeared interminable. Suddenly, a glimpse of a dark patch of rocks appeared above looming through the mist. The slope of the ridge became more gentle for a few yards. Our attention was all fixed above, and we ascended some distance without noticing the change. Another short rise, and we were walking quickly along the ridge. We stopped suddenly ; the rocks we had seen so recently had sunk below us on our left, while in front the arête could be followed with the eye, sloping away gradually for a few yards and then plunging sharply down to a great depth. It was all over ; through fair weather and through foul we had succeeded ; and there was yet another peak to the credit of the Alpine Club.

It was not a time for words. Burgener turned to us and touched the snow with his hand, and we sat down in silence. Almost on the instant as we took our places a great burst of thunder rolled and echoed around—a grim salvo of Nature's artillery. The sudden sense of rest heightened the effect of the oppressive stillness that followed. Never have I felt the sense of isolation so complete. Gazing in front into the

thin mists, the very presence of my companions seemed an unreality. The veil of wreathing vapour screened the huge panorama of the ice-world from our sight. The black thunder-clouds drifting sullenly shut out the world below. No man knew where we were; we had reached our furthest point in a strange land. We were alone with Nature, far from home, and far from all that we were familiar with. Strange emotions thrilled the frame and quickened the pulse. Weird thoughts crowded through the mind—it was not a time for words. Believe me, under such conditions a man will see further across the threshold of the unknown than all the book-reading or psychological speculation in the world will ever reveal to him.

Coming back to considerations more prosaic and practical, we found that it was 1.15 P.M. We realised, too, that the ascent had been very laborious and exhausting, while there was no doubt that evil times were in store for us. There were no rocks at hand to build a cairn, but we reflected that the snow was soft and that our footsteps would easily be seen on the morrow. The aneroid marked the height we had attained as 16,550 feet.* A momentary break in the mist gave us a view of Koschtan Tau, and we had just time to get a compass observation. After a stay of fifteen minutes we rose and girded ourselves for the descent. I think we all felt that the chief difficulty was yet to come, but we had little idea of what was actually to follow. Directly after we had left the summit a few puffs of wind began to play around and some light snow fell. Still, it was not very cold, and if the storm would only keep its distance all might be well. Down the first slope we made our way rapidly enough, and could have gone faster had we not deemed it wise to husband our strength as much as possible. In an hour and twenty minutes we reached the place where we had left the provisions and the camera. The feast was spread, but did not find favour. Never did food look so revolting. The bread seemed to have turned absolutely black, while the steinbock meat looked unfit to keep company with garbage in a gutter; so we packed it up again at once, more from a desire to hide it from our eyes than from any idea that it might look more appetising later on. Andenmatten's headache had become much worse, and he could scarcely at starting stand steady in his steps. Possibly his suffering was due to an hour or two

* This estimate agrees pretty closely with the height given by Mr. Freshfield for Totonal Tau, viz. 16,500 feet. Cf. footnote to p. 232, *supra*.

of intensely hot sun, which had struck straight down on us during the ascent. I could not at the moment awaken much professional interest in his case, but the symptoms so far as I could judge were more like those experienced by people in diving-bells—were pressure effects in short—for the pain was chiefly in the skull cavities. I may not here enter into technical details, and can only remark now that though Andenmatten suffered the most it by no means followed on that account that his head was emptier than anybody else's. In due course we came to the ice slope up and across which we had cut our way so laboriously in the morning; here, at least, we thought we should make good progress with little trouble; but the sun had struck full on this part of the mountain, and all the steps were flattened out and useless. Every single step ought to have been worked at with as much labour as in the morning, but it was impossible to do more than just scratch out a slight foothold, as we made our way round again to the ridge. Below on the west side the slope plunged down into the *Ewigkeit*, and our very best attention had to be given in order to avoid doing the same. It was one of the worst snow faces I ever found myself on, perhaps under the conditions the worst. The direction in which we were travelling and the angle of the slope made the rope utterly useless. Close attention is very exhausting: much more exertion is required to walk ten steps, bestowing the utmost possible care on each movement, than to walk a hundred up or down a much steeper incline when the angle demands a more accustomed balance. Not for an instant might we relax our vigilance till, at 5.30 p.m., we reached once more the ridge close to the place where we had forced our way through the cornice in the morning.

We had little time to spare, and hurrying up to the point looked anxiously down the snow wall. A glance was sufficient to show that the whole aspect of the snow had entirely altered since the morning. Burgener's expression changed suddenly, and a startled exclamation, which I trust was allowed to pass unrecorded, escaped from him. Andenmatten brought up some stones and rolled them down over the edge; each missile carried down a broad hissing band of the encrusting snow which had given us foothold in the morning and swept the ice-slope beneath as black and bare as a frozen pond; here and there near rocks the stones stopped and sank deeply and gently into the soft, treacherous compound. The light had begun to fail and snow was falling more heavily as we pressed on to try for some other line of descent. A hundred

yards further along the ridge we looked over again: the condition of the snow was almost the same, but the wall was steeper and looked at its very worst as seen through the mist. Some one now suggested that we might work to the north-west end of the ridge and make our way down to the pass by the ice-fall. We tramped on as hard as possible, only to find at the end of our journey that the whole mass seemed abruptly cut away far above the Adine Col, and no line of descent whatever was visible. We doubled back on our tracks till we came within a few yards of the summit of a small peak on the ridge, the height of which was probably not less than 15,000 feet. Already the cold was numbing and our wet clothes began to stiffen; again we peered over the wall, but the rocks were glazed, snow-covered, and impossible. The leader stopped, looked right and left along the ridge, and said, 'I don't know what to do!' For the moment we seemed hopelessly entrapped; the only conceivable place of shelter for the night was a patch of rocks close to the summit of the peak near at hand, and for these we made. It was an utter waste of time. Apart from sleeping, we could not have remained there an hour, for we met the full force of the wind, which by this time had risen considerably, and was whirling the driving snow into every crack and cranny. What might have begun as a temporary rest would infallibly have ended in a permanent occupation. Indeed, the cold would have been far too intense that night for us to have lived on any part of the bleak ridge. The situation was becoming desperate. 'We must get down off the ridge and out of the wind.' 'Ay,' said Burgener, 'we must, I know; but where?' The circumstances did not call for reasonable answers, and so we said, 'Anywhere! To stay up here now means that we shall never get down at all.' Burgener looked up quickly as if to say no, but hesitated and then muttered, 'That is true. Then what will you do? There is no way down anywhere along the wall with the snow as it is now. There are great ice-slopes a little way down.' As he spoke he leant over and looked along the wall for confirmation of his opinions. A little way off a rib of rock, blacker than the rest, showed through the mist. We both saw it at the same time; Burgener hesitated, looked at it again, and then facing round glanced at the prospect above. The wind was stronger and colder and the snow was driving more heavily. There was no room for doubt. We must put it to the touch, and take the risk. We turned again, in a few minutes had squeezed ourselves through the cornice and were fairly launched on the descent.

We were now on a much higher level on the ridge than at the point we had struck in ascending. It was only possible to see a few yards down; the rocks looked appallingly steep, glazed, and grizzly, and we knew not what we were coming to. But at any rate we were moving, and in a stiller atmosphere soon forgot the cold. We went fast, but only by means of doing all we knew, for the climbing was really difficult. It was a case of every man for himself, and every man for the rest of the party. Now was the time to utilise all that we had ever learned of mountain craft. Never before, speaking for myself only, have I felt so keenly the pleasure of being united to thoroughly trustworthy and good mountaineers; it was like the rush of an eight-oar, where the sense of motion and the swish through the water alone are sufficient to make every member of the crew put all his strength into each stroke. The mind was too active to appreciate the pain of fatigue, and so we seemed strong again. Now on the rocks, which were loose and crumbly in parts, elsewhere big and glazed, now in deep snow, now on hard crusts, we fought our way down. So rapid was the descent that when the opportunity offered we looked anxiously through the mist in the hope of seeing the glacier beneath. We must have hit on a possible line of descent to the very bottom. But there was not a moment for the grateful repose so often engendered by inquiring minds on the mountains. We were racing against time, or at least against the malevolent powers of darkness. Down a narrow flat couloir of rock of no slight difficulty we seemed to go with perfect ease, but the rocks suddenly ceased and gave way to an ill-favoured snow slope. The leader stopped abruptly and turned sharp to the right. A smooth ice-gully some thirty feet wide separated us from the next ridge of rock. The reason for the change of direction was evident enough when Burgener pointed it out. As long as the line of descent kept to the side that was more sheltered during the day from the sun, so long was the snow fairly good. Our leader judged quickly, and with the soundest reasoning, as it proved directly afterwards, that the line we had been following would infallibly lead, if pursued further, to snow as treacherous as that with which we were now so familiar. Across the ice-slope then we must cut, perhaps, a dozen or fifteen steps. The first two or three Burgener made vigorously enough, but when within ten or fifteen feet of the rocks the extra effort told. He faltered suddenly: his blow fell listlessly, and he leant against the slope, resting hands and head on his axe. 'I am almost exhausted,' he said

faintly, as he turned round to us, while his quivering hands and white lips bore evidence to the severity of the exertion. So for a minute or two we stood in our tracks. A word of encouragement called up what seemed almost a last effort : some little notches were cut, and we gained the rocks again. A trickling stream of water was coursing down a slab of rock, and at this we gulped as eagerly as a fevered patient. Standing on the projecting buttress, we looked anxiously down and caught sight at last of the glacier. It seemed close to us : the first few steps showed that Burgener's judgment was right ; he had changed the line of descent at exactly the right moment and at the best possible place. Down the last few hundred feet we were able to go as fast as before. The level glacier beneath seemed in the darkness to rise up suddenly and meet us. We tumbled over the bergschrund, ran down a short slope on the farther side of it and stood in safety on the glacier, saved by as fine a piece of guiding as I have ever seen in the mountains. We looked up at the slope. To our astonishment all was clear, and I dare say had been so for long. Above, in a blue black frosty sky, the stars were winking merrily ; the mists had all vanished as by magic. No doubt the cold, which would have settled us had we stayed on the ridge, assisted us materially in the descent by improving the snow.

There seemed still just light enough to search for our tracks of the morning across the glacier, and we bore well to the right in the hope of crossing them. I fancy that the marks would have been really of little use ; but anyhow, we could not find them, and so made a wide sweep across the upper part of the snow basin. As a result we were soon in difficulty with the crevasses, and often enough it seemed probable that we should spend the rest of the night in wandering up and down searching for snow bridges. But we made at last a patch of shale and rock, which we took to be the right bank of the little glacier we had crossed in the morning. Our clothes were wet, and the cold was becoming so sharp that it was wisely decided, against my advice, to push on if possible to the tent at once. For some three or four hours did we blunder and stumble over the moraine, experiencing not a few tolerably severe falls as we did so. Andenmatten selected his own line of descent, and in a few minutes we had entirely lost sight of him. It was too dark to find our way across the glacier, and we could only hope by following the loose stone ridge to make our way to the right place. So we stuck to the rocks, occasionally falling and nearly

sticking on their detestably sharp points. Even a Caucasian moraine leads somewhere if you keep to it long enough, and as we turned a corner the huge glimmering mass of Guluku towering up in front showed that the end of our journey was not far off. Presently the little white outline of the tent appeared, but we regarded it with apathy and made no effort to quicken our movements, although the goal was in sight; it seemed to require, in our semi-comatose condition, almost an effort to stop. As we threw open the door of the tent the welcome sight of divers packets neatly arranged in a corner met our gaze. The head policeman had proved himself an honour to his sex, an exception to his compatriots and a credit to the force. There was bread, sugar, rice, meat, and firewood—yet we neither spoke nor were moved. Andenmatten spurned the parcels with his foot and revealed the lowermost. A scream of delight went up, for they had found a packet of tobacco. The spell was broken, and once more all were radiant. Such is man. A strange compound—I refer to the tobacco—it proved to be, that would neither light nor smoke, and possessed as its sole property the power of violently disagreeing with the men. It was past midnight before the expedition was over. There were few preliminaries observed before going to bed. I don't think that even Donkin took more than a quarter of an hour in arranging a couch to his satisfaction, and placing a very diminutive air-cushion on anatomical principles in exactly the right place; while Andenmatten was fast asleep in two minutes, his head pillowed gently on some cold mutton, and his boots reposing under the small of his back. Something weighed on our minds as we too lay down and tried to sleep. The towering cone of Tetruld, the distant view of Ushba, Elbruz, and the giant Dych Tau, the rock and snow-slopes pictured themselves one after another as dissolving views on the white walls of the tent. The expedition was over, but the pleasure and the impressions it had evoked were not. Faster and faster followed the visions as in delirium. I sat up, and in the excitement of the moment dealt a great blow at the nearest object, which, as it chanced, was Andenmatten's ribs. I shouted out to my companion. A muffled 'hulloa' was the response, and he too rose up. 'What is it?' 'By Heavens! it is the finest climb we have ever made.' And so it was. Then we fell flat back and went to sleep.

My readers, I fear, have long since been tempted to do the same, and the account of this single expedition must have seemed interminable. My tale has no moral, and I

scarcely dare hope that it has been in my power to give even a glimpse of the fascination of these scenes. Would that I were able to tempt some to visit them! Others have endeavoured to lure climbers to these wondrous mountains with but little practical result. Why should I succeed?

To those who have the health, strength, experience and energy, I can but say—**THERE**, in that strange country, those giant peaks wait for you—silent, majestic, unvisited. Would you revive in all their freshness the pleasures which the founders of our Club discovered thirty years ago? If the old feeling still is as strong as I think, as I know it to be, go there. If you love the mountains for their own sakes; if you like to stand face to face with Nature where she mixes sublimity of grandeur and delicacy of beauty in perfect harmony; if these sights fill and satisfy you of themselves—go there! If you prefer the grandeur, with some of the rough edges knocked off (and carried away in tourists' pockets); if you choose rather to play at travelling and roughing it, you will stay at home in the Alps. You will have missed much, and your mountain education will have been imperfect. If you think your temper is perfectly equable—go there; you will be undeceived, and your family circle may derive benefit therefrom. If you wish to be far from the madding crowd, far from the noise, bustle, and vulgarity of the buzzing, clustering swarms of tourists—go there. Nature will, as it were, take you gently by the hand and seem to say, 'I am glad to welcome you; come, and you shall look upon sights that I don't choose to show to everybody. Yet more, I will make a present of them to you; and in after times you shall call up in memory recollections of me, as I can be when in the mood, and you shall hug these memories with delight and even dream on them with enthusiasm.' If you wish for this—go there. To the end of your days you will remember it with pleasure. Go there!

MOUNTAINEERING IN THE CAUCASUS.

BY W. F. DONKIN.

(Read before the Alpine Club, May 3, 1887.)

NEARLY twenty years have passed since Mr. Freshfield revealed to us the magnificence of the Central Caucasus, and did all he could to induce others to follow in the new tracks which he and his party were the first to open



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out. Then in 1875 Mr. Grove's book appeared; but so far as practical results are concerned his appeal fell on deaf ears. And now one more voice has been raised urging us to go to the Caucasus. Shall we neglect it like the others? Are we contented to leave those superb peaks still untouched, while, like all well-regulated mountains, they are obtrusively waiting to be climbed, surveyed, mapped, photographed, and some of them even to be named? To think of there being peaks higher than Mont Blanc within ten days from London, and that we should not even know what to call them! Is it not a disgrace to the Alpine Club that the words 'nameless peak' should have been left all these years in Mr. Grove's map, in the middle of one of the grandest mountain groups in the world? Other people are not so apathetic. M. de Déchy has spent the last three seasons in the Caucasus, and has done a large amount of most valuable work, exploring, photographing, and mapping several quite unknown regions. M. de Déchy is a member of the Alpine Club, and we are proud to own it; but such work should surely not be left entirely in the hands of one of our foreign members, nor will it be, if, as is sincerely to be hoped, the English parties who have now for some time been making preparations are able to carry out their intentions, and can go to the Caucasus next season.

Our President, however, has for years past turned his thoughts in that direction, and in 1884 he suggested to me a project for a short tour in the Caucasus. We were unable then to carry it out, but last year the various obstacles were overcome, and I had the privilege of going with Mr. Dent, and exploring with him the head of the Bezingi valley. The experience we gained may be of use to others, so I propose to supplement his graphic account of our principal expedition by a description (probably far more soporific than any paper of his could be) of some of our subsequent doings. Being much limited for time, we had decided before starting not to attempt any extensive exploration such as our predecessors had made, but to select a limited district, and see how far the methods of mountaineering with which we were familiar could be applied in a country where most of the equally familiar resources—represented, let us say, by the Monte Rosa hôtel—are conspicuous by their absence. In thus putting all our eggs into one basket, we accepted the risk of total failure from the mountaineering point of view, a risk which the well-known uncertainty of the weather, greater here than in the Alps, rendered only too possible.

And so it came to pass that on the morning of August 28 we found ourselves basking in the sun outside our tent by the Bezingi glacier, with the pleasing consciousness of having yesterday vanquished that beautiful white cone which rose steeply from the gigantic cliffs behind us. That we should have any sun to bask in, after our week's experience of cloud and rain, was so charming and novel a circumstance that we commemorated it in a photograph of our camping-place. And we looked round at the magnificent amphitheatre of peaks enclosing the great snow-fields and tributaries of the Bezingi glacier, and then northwards down the long level glacier itself, and we forgot our long journey and the constant delays and difficulties since we started, nearly a month before, and our wearisome four days' ride across the steppe and up the valley to Bezingi—we forgot the pitiless rain that had kept us inactive in the tent for two miserable days and nights, and we forgot—for a time at least—the ceaseless chatter of the three natives and the imbecility of our interpreter, for they were down at our last encampment; and here we were alone with Alexander and Basil, our trusty guides, with still a few scraps of mutton and steinbock left, and some of the putty-like bread. The weather really looked fairly promising; we must not lose the chance of doing something more. Should we still make a bold attempt on Koschtan Tau? There it was before us to the east, the last and biggest of the great glacier-clad cirque of mountains. If so, we must be off at once, and sleep out on the moraine as near the northern arête as possible. But no; the chance of success was too remote. Basil and I had been along the moraine on the other side of the glacier the day after our companions had explored it and had climbed the screes above it a long way up, to a height of 12,700 feet, and from there had had a grand view of Koschtan Tau opposite.* We too examined it critically, but our opinion was the same. It was too huge a mountain for an attack under such conditions. We might perchance get a long way up the northern arête; in ten or twelve hours we might find the hardest part of the ascent was done—but what next? There is no possibility of shelter anywhere from top to bottom, and even if we did succeed in reaching the top, we should inevitably be benighted long before we got down again, and our experience of the day before would be

* See the panorama accompanying this paper.

repeated as far as our start down that forbidding wall, but no farther. It would not do to risk such a fate. A week or ten days of fine weather would give us a better chance; but we could not possibly wait as long as that, so we finally gave up the idea—it had never amounted to a determination—of attacking Koschtan Tau. Burgener was sadly disappointed, though he saw the obvious necessity of the decision. But we must do something; in two more days we must go down the valley again, for the natives had firmly declined to stay any longer than that, or to come up again with more provisions: it was literally a case of retreat or starvation. Burgener was exceedingly keen for another climb—not that we were any less so; but it was from him that the suggestion came to try the rocky peak opposite to us, round the base of which flowed the great ice-stream from the flanks of Koschtan Tau and Djanga—not, indeed, the lower peak whose slopes rose immediately from the glacier, but the great rock mountain behind it, which formed the culminating centre of the group dividing the Bezingi and Mishirgi glaciers. What could this be but the ‘nameless peak’ of Mr. Grove’s map? It was exactly in the position there indicated, and when we were on the arête of Tetruld the day before, we had seen that it was no insignificant ridge, but an isolated peak of great height, probably at least 16,000 feet, surrounded by rocky buttresses. Basil and I had had a nearer view of it also from the before-mentioned screens; we had, in fact, gone a long way up towards it, and had seen that the mountain would afford some splendid rock climbing. The suggestion was hailed with enthusiasm, and we at once set about making preparations. But, alas! the clerk of the weather was evidently determined on a policy of obstruction, for the sky was clouding over, as it had done regularly almost every afternoon, and rain began to fall. We did not quite lose hope, however, for in two or three hours it stopped raining, and I took the opportunity of going down to our last camping place, where we had left the natives with the horses and some of our baggage, in order to fetch up another roll of photographic paper and some firewood. It seemed but a little way, and the others made no objection whatever to my going alone. The glacier is level and perfectly easy, the only difficulty being to see where to leave it through the séracs on the other side. Naturally enough, I missed the best way off, and was delayed there for nearly an hour. Reaching the camp at last, I found the three natives and the inter-

preter nearly at the end of their stock of patience, and declaring they would not wait the two days for us except for extra pay. Remonstrance was vain, and I had to give in. A full hour was gone before I started back with the roll of paper in my pocket and a bundle of firewood on my back, and I had not gone a mile back along the grassy moraine when I heard a jodel and saw Basil coming to meet me. The good creature really shed tears of joy at sight of me; they had seen me wandering among the big séracs trying to get off the glacier, and as I did not reappear they concluded I had come to grief. As we emerged through the séracs, we descried Alexander coming down the glacier to look for us. He, too, was overjoyed at our re-appearance; nothing but an accident, he was convinced, could have kept us so long. Daylight was rapidly waning as we hurried back over the long glacier, and Dent received us as we neared the tent with a salvo of shots from his revolver. He said he had been firing half the afternoon for our guidance; he might as well have expected us to hear a popgun across the Channel. I mention these trivial incidents as showing how completely even the guides were deceived in their estimate of time and distance in these regions. After a frugal supper off scraggy bits of mutton out of the calico bundle in the corner of the tent which represented our larder, we packed ourselves in for the night like the proverbial sardines; not, however, until, with much fumbling by the light of a little red lantern, I had put a fresh roll of photographic paper into my apparatus. The stars had come out, and our spirits rose with the prospect of a fine morning.

The sky was still dark and clear when Alexander roused us at three o'clock, though there was more twinkle about the stars than we quite liked. It may well be asked why we did not start much earlier with such an expedition in hand. Certainly we ought to have been off long before, but unluckily for us there was no moon. Well, but of course you had a lantern? Ah! no; there was just the pity of it. I will not trouble you with the history of those two lanterns we had bought in Vienna, that were left behind through being mislaid by the hotel people, and the utter failure of the wretched little things we got at Odessa to replace them—no; the loss of those lamps was perhaps the most serious misfortune that befell us during our whole trip. And so it was full four o'clock before we left the tent, after carefully stowing all the baggage inside it, and scrambled down the dusty moraine on to the ice below. One of the

most remarkable points about this glacier is its level and compact character nearly up to the cliffs of Djanga, and the absence of great fields of névé, except farther on under the flanks of Koschtan Tau. The fact is, it sweeps past Djanga much as the Gorner glacier does past the Breithorn, whose north face is here imitated on a vastly larger scale by its Caucasian representative. And so we had but little trouble in crossing the ice to the opposite corner by the first glimmerings of daylight, and a short climb up a bit of rock landed us on the end of the long and level moraine above, which skirts the north side of the Djanga glacier. As we pressed forward along it, the sun rose in a cloudless sky and gilded the tops of the magnificent peaks on our right. The moraine at its farther end merges into endless slopes of stones, which come down from a rotten shaly ridge above on the left. Across the foot of these we toiled, making for the moraine of a tributary glacier which comes down from the flanks of our nameless peak in a steep ice-fall. Reaching this moraine at last, we gradually curved round to the left as we mounted its steep ridge, and after hours of this toilsome moraine work we came in sight of our peak as we touched ice again. The mountain as seen from below on this side is a huge and somewhat ungainly hump of rock, and might be compared to an enormously exaggerated Rothhorn; the upper part of which, judging from its appearance and the character of the débris around, we believed to be granite. Round it, at a level of perhaps 1,500 feet below the top, runs a well-marked horizontal belt of rock of a deep ochry-red colour, apparently all round the mountain, or at least round its southern face. Below this again are darker rocks, and snowslopes which feed the small glacier we were now traversing. After some discussion as to which of the several eminences visible was the real top, and deciding to try for the left-hand or northern one, we crossed the small glacier, and found ourselves at the base of the mountain itself. An easy bit of rock-climbing soon took us out of the range of the séracs of a small hanging glacier, and we sat down for breakfast by a trickling stream. It was nearly eight o'clock, and we did not spend much time over the mutton bones and the hoarded fragments of hard black bread; but we soon pressed on, and a few hundred feet higher emerged on a small snow-field, forming a sort of wide sloping shelf running some way round the peak. We turned round to look at Koschtan Tau, which, notwithstanding our 14,000 feet of elevation, looked as high above us as ever. The sun blazed down on

us, and we were all buoyant with hopes of success, when a sight caught my eyes which made my heart sink. It is at such moments, when confidence is highest and success seems all but assured, that one's hopes are most easily dashed to the ground by the first suspicion of adversity. What was this alarming spectacle? Merely a little fluffy cloud which was hanging about one of the lower peaks on the west side of the glacier. Alas! had we not seen it only too often already? Not a single bright morning had cheered us, but the same insidious little harbinger of evil had brought bad weather; and why should we hope to escape to-day? It was now or never for the photographs, so we quickly unlimbered, and I took some views of the range opposite, while Dent took some bearings with the prismatic compass. There was Uschba, far away to the west, and Tetnuld, the peak we had climbed two days before, and just beyond it to the S.W. rose the snowy pyramid of Totonal, the sight of which from the ridge had so impressed us.* Our peak was still clear above us; the rocks looked splendid, and seemed to afford any number of routes, and there seemed still a chance that it might stay clear. We soon crossed the crisp snow; the rocks above were nowhere very steep, but it was plainly a very long way up to the highest visible rocks, and how far back the real top might be behind them no one could say. We mounted quickly, but after a time the pace slackened as we got into a couloir which narrowed above into a chimney; not one of the irregular cracks commonly dignified by that name, but an actual hole, nearly vertical, and so narrow that Alexander could scarcely squeeze his burly frame through it. When at last he had wriggled out into daylight above, we followed one by one, with much hauling and shoving, and found ourselves on easier ground. But, ah! there was now no doubt about the meaning of those treacherous little clouds; they were spreading all over the lower hills, a small flag had already begun to form on our peak above us, and, worst of all, a long fringe of ragged-edged cloud was curling over the great ridge of Koschtan Tau and Djanga straight towards us from the southern side. Our hopes sank low. We looked at our watches: it was already nearly eleven o'clock. We looked up at the long terraces and ridges of broken rock above us, now partly wreathed in translucent mist, and seeming far higher than they did before in the clear blue sky. Surely we may yet

* See Mr. Dent's paper, *ante*, pp. 231-2.

succeed, as we did on Tetnuld; we shall probably get no view, but many a mountain has been climbed through clouds, through snowstorms even, before now. On, then, on! The rocks are splendid, and Alexander has chosen a most promising route; the sun is still blazing on us, still there is a chance that the weather may hold up. For half an hour we press on with all the energy we can command. We must have risen several hundred feet; yet that white gendarme up there, which we marked when down below, it scarcely seems to get any nearer; it is but a little way above the great belt of red rocks; and we have hardly touched them yet. What a gigantic mountain it is! Our camp should have been at the place where we breakfasted instead of miles away down on the glacier; then there would have been a chance of climbing it in reasonable time. Is there really any chance left now, or are we only deceiving ourselves? Deceived indeed we were once more by these tremendous distances and heights. What was our position? Here we were at mid-day at a height of 15,000 feet, our real work only now begun, and at least four hours more climbing before us, the top in clouds, and a storm brewing fast behind us. Oh! it was too utterly hopeless. Mechanically we moved on; no one liked to confess that we were beaten, but every minute made the fact plainer and retreat more inevitable. Presently Burgener stopped, and we all stopped. It was a good place for another meal, and we sat down in a listless fashion. It seemed as if all the spring was taken out of us, and as we gnawed at the repulsive bones which Basil produced from his knapsack, we looked across at the bank of dense cloud now rapidly surging over and hiding the arêtes opposite, and we could no longer blind ourselves to the hopelessness and folly of attempting to push on any higher. As we sat in grim silence the sun disappeared, and at the same moment a violent gust of wind howled round the ridge under which we were sitting. Hurriedly we collected our things and started. There was no discussion as to which way to go; the only question now was how far we should get down before we met the storm. I picked up a few specimens of the rocks round us, and with heavy hearts we began to retrace our steps. It was a terrible disappointment. Such a magnificent peak as we now knew it to be, all its upper rocks of fine grey granite, with the most inviting ridges and gullies, couloirs and snowslopes, affording the utmost variety and interest, with evidently a considerable amount of difficulty, and an exciting uncertainty as to which, if any, of the

rocky towers as seen on the sky-line from below was the real top—all this made our defeat very hard to bear.

We took a somewhat different route in descending, easily avoiding the necessity of getting down through the chimney, which had, indeed, delayed us a good deal on the way up; and at about three o'clock we were down again on the snow-slope where in the morning we had first read our only too probable fate in the changing sky. On we pressed, down the rocks where we had breakfasted and across the small glacier below. We did not follow its course downwards to the left so as to strike the moraine by which we had come up, but by crossing it to the top of the screes we considerably shortened the descent. Just here we passed the cairn which Basil had built to mark the highest point we reached when he and I had been exploring alone, and from which point I had taken several photographs and compass bearings. Not much was to be seen in front of us now of that superb panorama. The whole glacier-basin was filled with rolling cloud, and we began to feel the fine sleet already in our faces as the chilling blast swept across the slopes. We plunged into the yielding shale, and at a swinging trot made rapid progress down and across the huge wilderness of stones. Thicker and thicker came the sleet as we scrambled down the little crumbly cliff which landed us on the moraine below. As we hurried along the level ridge, more than a mile in length, the sleet changed to heavy rain, which drove in violent squalls across the glacier, and before we reached the end of it, where the steep rocks by the side of the ice-fall give access to the glacier below, we were thoroughly wet through. In sorry plight we took the now familiar route across the ice, the water streaming off the brims of our hats, while we wondered as we plodded along in single file whether we had or had not forgotten to stow away the firewood inside the tent. Never had the glacier seemed so wide, nor the moraine, when at last we reached it, so cruelly steep. We toiled up its now pasty and slippery side, and ran down into the little grassy hollow where stood our tent. Hurrah! the wood is inside—so is everything else; the canvas has most creditably withstood—not for the first time—the driving rain, and except for an inevitable dampness nothing is actually wet. A fire is soon kindled at the cooking-place a few yards away, and while we got out of our boots Alexander made some tea. It was not much after six o'clock when we got back, but I do not think we sat up long that evening. I do not remember

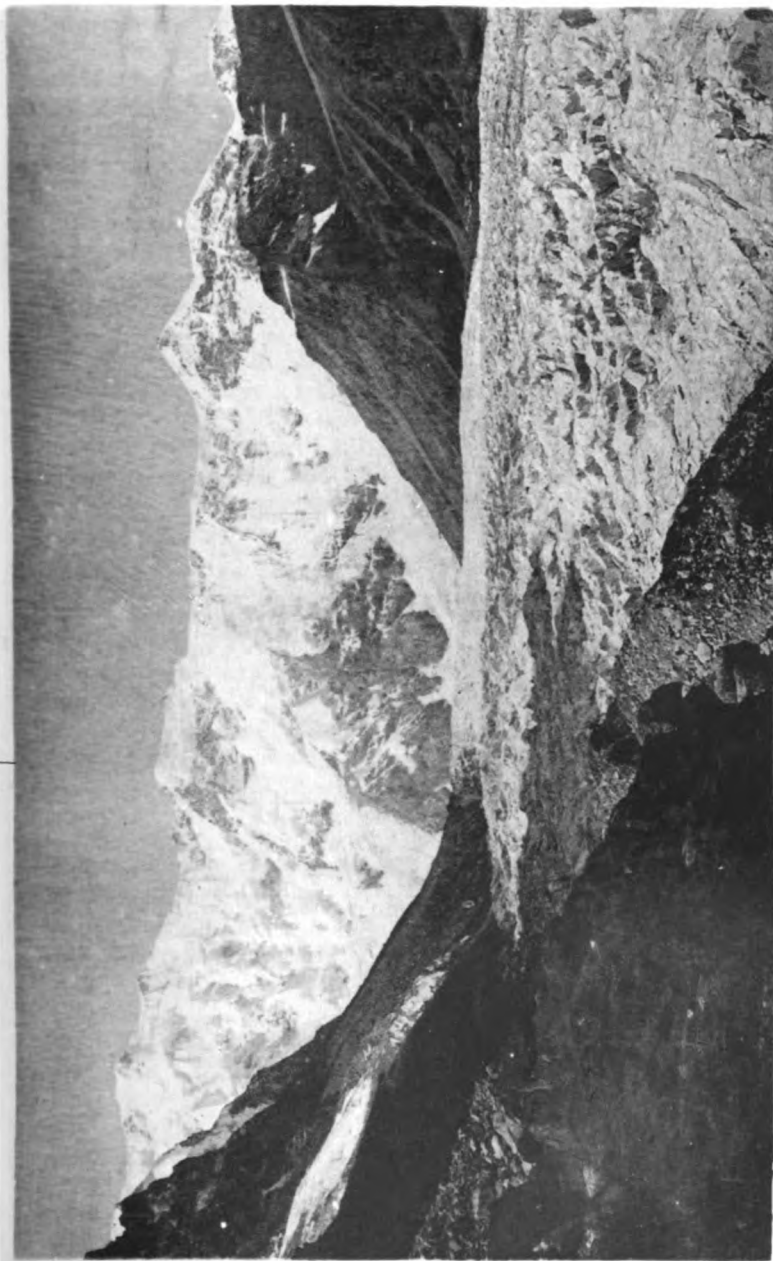
that Dent told me a single story over our supper, nor did he resume his praiseworthy efforts to teach me piquet—a resource of previous wet afternoons. Our spirits were almost as wet as our clothes, and there was nothing for it but to go to bed. We rolled ourselves in the blankets, the guides wedged themselves in beside us, and we spent the most comfortable night we had yet experienced under canvas.

It may be noted here that it is very important that the waterproof ground-sheet should be of ample size, so that the edges may turn up to a good depth all round when tied to the sides of the tent. Anything touching the wet canvas brings the water through, and our ground-sheet did not come up high enough to protect our things properly.

When day dawned it was evident the weather had broken, for, though the rain had nearly stopped, leaden clouds filled the whole valley. We emerged from the tent in a steamy condition, and set about packing up with such energy as we could command, for we were stiff with lying in our wet things. By a quarter to eight we had got everything packed, and set off down the glacier to our last camp, where the natives were waiting for us. As we started, the clouds lifted over Guluku; it was a mass of fresh snow. No one now could say we had retreated the day before without good reason. We were all pretty well laden; Alexander, besides two or three knapsacks, carried the tent—no light burden, soaking wet as it was. By nine o'clock we reached the bivouac, and found the men only too ready to load up the animals and be off at once. As usual, the little donkey got by far the heaviest load, under which it staggered bravely along, though it fell more than once among the rough boulders, and had to be lifted bodily out. Before starting, we asked the men what they called the great peak above us, and the head policeman—the only one of them who could boast any literary attainments or had the smallest appreciation of what we had come for—wrote down *Guluku* in my note-book. The hunter agreed, so the name was adopted *nem. con.* We made out from the men that the ricketty bridge by which we had crossed to the right bank of the stream soon after leaving Bezingi had come to grief, so in order to reach the left bank we took the animals across the ice over the foot of the glacier. I managed to secure a photograph of the procession in transit, and then we bade farewell to the glacier, and trudged down the path—a vastly better one than that on the other side—to Bezingi. It was three o'clock before we got there, for

the distance is at least fourteen miles; and when the Heir Presumptive to the Principality welcomed us in, and brought the samovar, and gave us tea and pancakes, we felt ourselves in the lap of luxury. When presently a dish of fresh butter appeared and a quantity of eggs, we fell upon them with shrieks of joy. Never had omelette tasted so good as those fried eggs. We were indeed in want of a change of diet—ten days of black bread and meat had given us all a lean and hungry look; yet it seemed but yesterday that we were here before. Was it really all over, and had we seen the last of the mountains? To-morrow was August 31; could we not spare a day or two more and go up the side valley eastwards, above the village, and get at least a glimpse of Dych Tau, which we had scarcely even seen as yet? The head policeman had offered to go with us, though he persisted in calling Dych Tau Koschtan Tau, and *vice versa*; but next morning the clouds, which had lifted somewhat, came down again as thick as ever. We had lost all faith in the weather, so we gave it up, and prepared to start for Naltschik instead. Again the endless wrangling over payment for the horses; again the wearisome delays. But the men assured us that we could go by a shorter way than by following the Tcherek; that it was possible to get there in one day by starting early, or very easily in two days, sleeping at a place they knew of on the way; we chose, therefore, the latter alternative. We were badly off for presents to give to our hosts on leaving, and were delighted when the old chief expressed a wish to purchase our spare rope. Of course we presented it to him at once. It was a new 100-foot length, and was instantly carried off to be measured. At last, by mid-day, the horses were ready, and we bade farewell to Bezingi and its primitive folk. I was the last to ride out of the enclosure, and I can see before me now the tall figure of the old chief, his pet sheep with the highly cultivated tail nibbling at the grass sticking out of his shoes as he stood gazing with melancholy countenance across the valley.

We were accompanied by his son, whom we called H.R.H. for short, and by another native, who professed to be intimately acquainted with the road to Naltschik. Down as far as the foot of the zigzags below the gorge all went well, but as we mounted the rising ground straight in front of us, instead of turning to the right along the banks of the river, the rain, which had long been threatening us from behind, came down in earnest, and we put on our waterproofs. It was nearly five o'clock, and we asked how far on the stopping



DJANGA TAU.

TETNULD TAU.

UPPER PART OF BEZINGI GLACIER.

place was. 'Three hours' was the reply which ultimately filtered through the interpreter. Three hours! well, hurry on, then! Why, we shan't get in by daylight even now; we shall be benighted once more, as we have been every single time we have trusted to these dilatory people for guidance. Not the smallest idea have they of either time or distance; it is a matter of perfect indifference to them how late they start, and when and where they sleep. At the top of the steep grassy slopes the path became more level, but the clayey soil was extremely slippery with the rain, and progress was slow. Riding on for two or three miles, we entered a beech-wood. On a bright day it would have been very pretty, but we saw no beauty in it now. The dripping leaves brushed in our faces, and the horses slipped about and stumbled over the exposed roots of the trees as we followed the muddy track, now down into a dell and through a sloppy morass, now up a steep bank and through dense underwood, now down again into darker depths. 'Bother it,' muttered Dent, 'I hope there isn't much more of this.' Plenty more, however, there seemed to be. Once I dismounted at a more than usually steep and slippery descent, but after twice coming to grief over prostrate tree-trunks and getting covered with mud, I was glad to mount again and trust to my steed. Presently we emerged into an opening, and we hoped it was over. 'Are we near the place yet?' we demanded. 'One hour farther,' said the leader. One hour more! and it was nearly seven, and the light failing fast, and nothing to be seen all round but forest-clad hill and dale. 'We haven't seen the worst yet,' I thought to myself, as we plunged down into the wood once more. 'Hang it!' said Dent, in very audible tones; 'where is this idiot of a native taking us?' Darker and darker it grew; we soon gave up trying to see the ground, for the branches demanded all our attention. We rode on in single file, and left the horses to follow each other. The wood grew thicker and darker at every step; soon all I could see was Dent's white waterproof, barely visible close in front of me. 'Heads!' he shouted, as he ducked his head under a branch. I ducked mine, and with the help of my umbrella generally cleared it; but once I was not quick enough, and my hat was gone. A little more, and I should doubtless have followed Absalom's example, and been left dangling by the neck from the tree. We shouted to the natives, who came back, and H.R.H. very soon found the hat in the darkness, to my astonishment, and

picked it up from the ground without dismounting. Again we plunged forward, marvelling how the little horses kept their feet and avoided the trees. Presently a yell from somebody ahead of us; it was only the interpreter who had got struck in the cheek by a sharp branch. Then a great scrimmage was heard behind, and piteous shouts, which caused the whole cavalcade to stop. Basil was found to have dismounted without leave, bringing down three rucksacs and the tent with him; we picked him up out of the mud and rode on, fully expecting the same fate ourselves at every step. We came to a roaring torrent, plunged through it without once seeing the water, crossed it again lower down, and then a third time, and still we pressed on, keeping together in the darkness by shouting, till, in a mass of dense green underwood, the natives came to a stand. They had lost their way. The explosive monosyllable which Dent now let fly at our fool of a leader nearly blew the sheepskin cap off his head. Ah, for those lanterns! Has not somebody a bit of candle? Alexander produced a bit two inches long out of his pocket; we lighted it, and the natives peered anxiously about. We harked back some way, and to our relief they hit upon the track again. The rain had nearly stopped, and there was but little wind, so the flickering light only went out about half-a-dozen times. It helped us along, however, but not a sign was there of any end to the forest. 'Hulloa! what's that other light up there?' as we saw a glimmer some way off through the trees. Pressing on, we found a couple of young Russian wood-cutters camping out under a rock at some height above us. A parley ensued, from which we gradually learned that there was no habitation nearer than Naltschik, fifteen versts away. I will not repeat the benevolent expressions we hurled at our imbecile leader; they were in English, and of a mildness suited to the occasion, but he understood them well enough. Of course we halted there; dragging the baggage up a steep bank, through a tangle of wet grass, we took possession of the Russian camp, the two boys accepting the invasion with characteristic stolidity. A happy country this, where evictions of a decided character are unattended with the smallest opposition or trouble.

The natives disappeared with the horses—where to we did not inquire, enough for us that our eyes were still in our heads and our limbs sound; and indeed we might have been worse off than before a blazing camp-fire. The Russians cut up more wood and piled it on, and in response to this indication.

of hospitable feeling we offered them tobacco ; they took it in silence, rolled it up, and smoked it with unmoved countenances. We fried some scraps of meat for supper, and shared it with them ; slowly and solemnly they ate it, and spoke not a word. We gave them pieces of our Caucasian bread ; they chewed some of it reflectively, then spat it out, and threw the rest away. Then they lay down and went to sleep. We watched by turns through the remaining hours of the night ; and when the horsemen reappeared in the morning, and we shook hands on parting with our hosts, a smile broke out for the first time on their expressionless faces. Then we resumed our ride, and it was a marvel how we had escaped unhurt in the darkness through such a forest. When at last, after several miles, we emerged and saw Naltschik church in the distance, we reflected that our former leaders were, perhaps, not such knaves as we took them for, when they led us all the way round by the river banks.

I will spare you further details of our journey home ; suffice it to say that we dismissed the two natives on reaching Naltschik. The imbecile one had the audacity to demand extra pay because he had lost his cap, so he alleged, in the wood, and we spurned him as he deserved. With the tall young chief we had quite an affectionate parting ; he was a good fellow, and was not to blame for the mismanagement of the day before. We left Naltschik early next morning, and drove in two springless carts fifty versts across the dusty steppe to the little railway station of Kotlairevsnai. It was an agitating drive ; Dent said he would have liked it better had his liver not seemed upside down all the time and his heart in his mouth. We had plenty of time to recover our composure in the leisurely train which conveyed us to Rostov and Taganrog. A day's voyage through the muddy Sea of Azov brought us once more to Kertch, whence the luxurious Batoum steamer took us along the Crimean coast to Sevastopol and Odessa.

And as we sat on deck under the awning, and smoked the fragrant cigarette, we talked over the events of the past three weeks, and took stock of what we had brought back in the way of tangible results : a number of compass bearings ; some rolls of Eastman's negative paper with (perhaps) some photographs on them ; a few bits of rock. The accompanying map embodies the results made out from the rough triangulation, confirmed and occasionally corrected by examination and measurement of the photographs taken

from the same points. It only professes to be fairly correct on the north side of the watershed and within the limits of the great glacier we had explored. We saw nothing of the south side except the head of the Mujal valley and the great snow-peak of Totonal. The country south and east of Koschtan Tau is indicated chiefly from the description and small map in M. de Déchy's interesting pamphlet 'La Svanétie Libre,' and from Mr. Freshfield's sketch taken from the Stuleveesk Pass looking westwards. The position of Dych Tau also is conjectural, for I failed to get its bearings. It is a matter of the greatest regret that we were prevented from utilising such commanding positions as Tetnuld and Guluku; a series of cross bearings from these points would have immensely increased the value and accuracy of the work. Still, on the whole, the rest of the map is correct enough, at any rate, not to mislead the next party of explorers who may go up the Bezingi valley. Many interesting problems are left for them to solve. The chief interest doubtless centres around Koschtan Tau itself. What is it like on the southern side? Is the snowy dome seen in the photograph the real summit, as we think it is, or does it lie farther west on the arête? A clear view from the top of Guluku or Totonal would probably settle this. A most interesting excursion would be the tour of Koschtan Tau, crossing the col at the foot of the northern arête, and traversing the deep ravines and bristling ridges which certainly trend southwards from the great mountain (and of which the arête connecting it with Nuamquam to the S.E. is part of the main watershed), and coming round to the Adine col on the N.W. But for such a tour as this the party must be better equipped than was ours. Above all, they must be independent of local means of transport, and with one good guide and two or three strong Swiss porters, must leave the natives behind when they set foot on the glacier. The arrangement of the baggage is an important matter; so much of the travelling will always be on horseback that the baggage should be capable of easy attachment to the saddles. We had one pair of saddlebags, and they were most useful; we should have been glad of two or three more pairs. It would be a good plan to put shoulder-straps on each bag; they could then be utilised as knapsacks when separated. We had three good-sized rucksacs, which were fairly satisfactory as such, but it was difficult to secure them to the saddles. A tent should certainly be taken. Ours was six feet square, but this is too small for a party of four; it should be seven

feet square. Sleeping-bags might occasionally be of great value, but should not be depended on alone; hammocks would frequently be useful in the native log huts, but not, of course, when in camp. Air-cushions are not only a great comfort, but are almost essential, frequently making all the difference between a good rest and a sleepless night. The cooking apparatus is, of course, of great importance; the difficulty is to reduce its size and weight consistently with efficiency. It is not likely that a party will start for these countries without proper credentials, and no doubt the more letters of introduction one has to exalted personages the better. The fact remains, however, that the only one of our letters which was of practical use was that from the Russian ambassador in London, written in Russian and with the official seal at the end, commending us to all whom it might concern. This certainly got us through at Tiflis when the police officials could not read our passports, but we had been at Bezingi a day before any of the natives saw it.

In concluding this paper, I am painfully conscious of its shortcomings as a discussion of the subject of Caucasian mountaineering as distinguished from Caucasian travel. It would be a difficult task in any case, and I feel it especially presumptuous on my part to have attacked it on so short an experience. But we have come back with very definite impressions on certain points, and I will briefly state them. Firstly, the scale of everything among these mountains is so vast that we habitually underestimated all our distances and times. The guides were even more at fault than we were in this respect. Imagine in the Alps the distances doubled, the heights increased by thousands of feet, and all the hotels and bridges swept away: that is much the condition of things in the Caucasus. Secondly, the changes of weather seem far more sudden and capricious than in Switzerland. If you go for travel, that matters but little; but if you go to climb, your expeditions will be made or marred according to the weather. Thirdly, the expenses of travelling are decidedly heavy, but once in the mountains there is next to nothing to pay for; *ergo* a short tour will be relatively far more expensive than a long one.

Many more suggestions I might make; but the one point above all others which I wish to emphasise is the paramount necessity of having an efficient interpreter,—a man who, besides being able to converse fluently with his employers and the guides, must show tact and authority in dealing with the natives. If in addition to this he is a good cook,

you will have secured one of the chief elements which go to make a successful tour in the Caucasus.

LIST OF REQUISITES FOR CAUCASIAN TOUR.

I. To be provided before starting:—

Tent.	Telescope.
Sleeping-bags.	Mountain aneroid (to 20,000 ft.).
Saddlebags.	Prismatic compass.
Rucksacs.	Clinometer.
Air-cushions.	Lanterns (Vienna pattern).
Cooking apparatus.	Burning-glass.
Wine-gourds (Silver & Co.).	Leather-punch.
Mackintosh coat.	Small hammer.
Umbrella (with white cover).	Pliers and wire.
Boot nails.	Linen bag, to hold small articles in the tent at night.
Boot laces.	Presents for natives, such as pocket-knives, razors, opera- glasses, &c.
Straps.	Note-books.
String.	
Money-belt.	
Bags for small coin.	

II. To be purchased in Russia:—

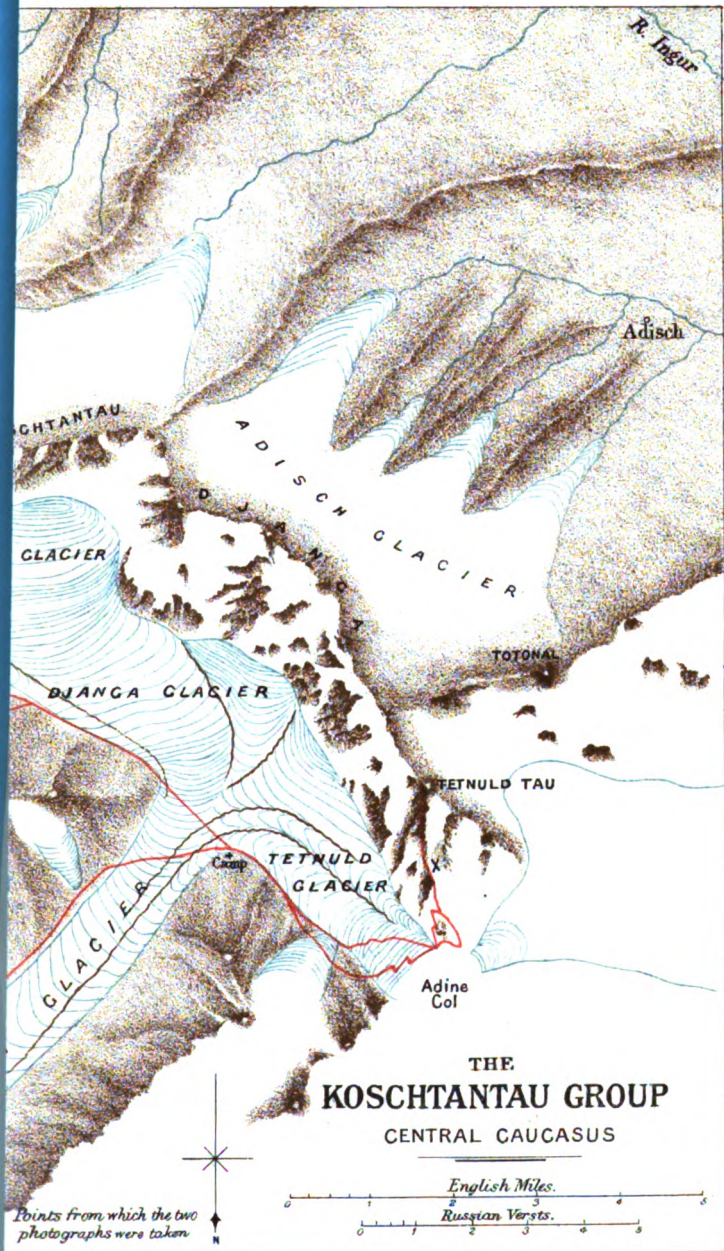
Small axe for wood-cutting.	preserved meats and soups, salt, matches, candles, &c.
Hunting-knife.	Several yards of strong linen, for packing provisions, &c.
Revolver and ammunition.	Blankets.
Insect-powder, camphor, vase- line.	Supply of small silver coins.
Rice, tea, sugar, biscuits, meal,	

Greatest requisite of all—Infinite patience.

IN MEMORIAM.—A. W. MOORE.

FEW who knew him can have heard without regret of the untimely death of Mr. A. W. Moore on February 2 last, at Monte Carlo, whither he had gone to recruit his health before entering on the duties of the post, recently conferred upon him, of Political Secretary at the India Office. His distinguished official career, his brilliant mountaineering achievements, his valuable services for a number of years to the Alpine Club, and the esteem—in not a few cases affection—felt for him by many of its members, all seem to demand a fuller recognition in the Journal than was possible in the brief paragraph inserted in the last number, just as it was going to press.

A. W. Moore was born in 1841. On leaving Harrow in 1858 he entered the employ of the East India Company, of which his father,



Wm. J. Turner.

Major J. A. Moore, was a director, and on the abolition of the Company transferred his services to the Crown. In 1875 he was appointed Assistant-Secretary in the Political Department of the India Office, and from 1876 to 1878, during the absence of Sir Owen Burne in India, acted as Secretary. When Cyprus was ceded to this country he was nominated one of three commissioners by whom the government of the island was to be conducted. This scheme was not carried out, but Moore's nomination shows the opinion formed of him by Lord Cranbrook, the then Secretary of State for India. In 1885 a rearrangement of the staff at the India Office took place, of which Moore took advantage to retire on a pension. He immediately returned, however, to the scene of his old labours as private secretary to Lord Randolph Churchill. As a further proof of the estimation in which he was held by the statesmen with whom he had come into contact, I may mention that a similar offer had been made to him by the Prime Minister, Lord Salisbury, who had had occasion to become acquainted with Moore's abilities during the previous Conservative Ministry. This offer, indeed, Moore had accepted, but it was afterwards considered that his services would be more valuable at the India Office. When the Conservative Ministry resigned, Moore was made a C.B., and doubtless further honours were in store for him had he lived. He continued to act as Lord Randolph Churchill's private secretary, and when the Conservatives took office again last year he accompanied Lord Randolph to the Treasury, remaining with him till his retirement at Christmas last. Early in January 1887 Moore was appointed Political and Secret Secretary at the India Office—one of the most honourable and important posts to which a civil servant of the State can attain. Before entering on his new office he obtained two months' leave of absence on the ground of ill health. I had noticed for the previous two years that he was failing both in health and spirits, and had repeatedly urged on him the necessity of a holiday, but with no effect. It was the only subject on which I ever found him unreasonable. When he did take rest it was too late. The proximate cause of his death appears to have been typhoid fever, probably contracted at Hastings, where he spent a week before leaving for the Riviera; but the real cause was no doubt overwork. It is sad to think of his career, cut short by a too scrupulous adherence to supposed duty, just as his merits had been recognised, his services rewarded, and a full opportunity afforded him of displaying his ability and sagacity. Truly his sun is gone down while it was yet day.

Moore paid his first visit to the Alps in 1860, but it was not till 1862 that he began, in company with the Rev. H. B. George, those expeditions which have made his name so illustrious in the annals of our Club. To the list of the more important new expeditions given in the last number of the *Journal* might be added many others interesting and useful, and many others not new but carried out in brilliant fashion. The ascent of Mont Blanc from the Col de Voza, with Almer alone, was a very fine expedition, while that with Mr. Foster from Courmayeur to Chamonix over the top of Mont Blanc in a day, though it has been repeated, can hardly be surpassed. I may also mention as a

remarkable ascent that of the Mönch from the Little Scheideck, with descent to Grindelwald in a day—an expedition which had until then occupied two or three days. This ascent he made with his left arm strapped to his body, on account of having dislocated his shoulder a fortnight before by a slip on the Bies Glacier.

When Mr. D. Freshfield and Mr. Tucker made their expedition to the Caucasus with François Dévouassoud in 1868, Moore joined them at Tiflis, and shared in their glacier explorations and first ascents of Kazbek and Elbruz. In 1874 he got up another party, of which I was one, to visit the same country. Owing to persistent bad weather we did not effect so much in the way of climbing as we had hoped, but such success as we had—and we made a most interesting journey, seeing much that was new on both sides of the chain—was in no small degree owing to Moore's admirable leadership. His self-denial in insisting on the rest of the party ascending Elbruz, while he stayed below in order to be ready to accompany some Russian officers the next day, is but one of many similar acts of unselfishness which rise to my mind.

There can, I think, be no doubt that to Moore is due the credit of the invention of climbing by amateurs in winter. It is true that before 1866 Professor Tyndall had visited Chamonix, and Mr. T. S. Kennedy Zermatt, but both those gentlemen encountered such bad weather that they had little chance of discovering how favourable the winter season might be for the prosecution of our favourite amusement among the high Alps. This was distinctly established by Moore by his passage of the Finsteraarjoch and Strahleck in 1866, and of the Brèche de la Meije in the following winter, and by his ascent to the Grands Mulets in 1869. I was with him on two of these winter expeditions, but I can lay no claim to the credit of the discovery, for then, as on all other occasions when we were together, my part was that of *fidus Achates* to his *Æneas*. Indeed, I was well content to follow such a leader, for his knowledge of the Western and Central Alps was for long unsurpassed, and his ingenuity in planning new and interesting routes inexhaustible. He had an extraordinary gift too for topography, and his description of localities in his charming book 'The Alps in 1864' and in his papers in the 'Alpine Journal' are singularly accurate and clear. He was one of the few men I have met, and Mr. John Ball confirms this remark from his experience in compiling the 'Alpine Guide,' capable of giving complicated topographical directions which could be followed without fear of mistake.

In 1872, when Moore was appointed secretary of the Club and Freshfield editor of the 'Journal,' if there was no lull in the enthusiasm for climbing, the Club, at all events, was in a very languishing condition, and its present prosperity is in no small degree owing to the exertions of the new secretary at that critical time. Many readers will remember what a model secretary Moore was, how energetic and judicious in his duties and correspondence, how animated and amusing in his after-dinner speeches. It is satisfactory to know that his colleagues proved their appreciation of his services by twice offering him the presidency of the Club, an offer which he fully appreciated, though he considered that his official duties compelled him to decline it.

Of Moore's personal character I will say but little. Attractive at first by his liveliness and wit, few men gained so much on nearer acquaintance, and his best friends were those who knew him best. He had a rare independence of thought and character. He loved discussion as much as he hated quarrelling. He stimulated every company he came into, and won the liking even of those from whom he most differed by the frankness and good temper with which he set forth his thorough views. Underneath his good-natured cynicism and affectation of egotism were concealed as warm a heart and as affectionate and unselfish a nature as ever existed; and his loss will be a source of deep and lasting regret to all who ever enjoyed opportunities of appreciating his high and sterling qualities.

HORACE WALKER.

MICHEL ALPHONSE COUTTET.

MICHEL ALPHONSE COUTTET, who died at his house in Chamonix on March 19 last, in his eighty-fifth year, was the oldest man in the valley who had served with distinction in the Company of Guides. A few years ago he was chosen on account of his seniority to take a leading part in the ceremonial at the erection of a monument to Jacques Balmat in front of the village church; and it is possible that some of the readers of these lines may remember noticing on that occasion the erect slender veteran with the bearing of an old nobleman rather than of a hard-working farmer. Otherwise 'le vieux Couttet,' as the village called him, can be known personally to but few of the members of the Alpine Club: intimately, perhaps, to none except the present writer.

No man could have been better chosen as a type of the veterans of the early days of mountaineering, the true pioneers, who, through the decades in which the summer snows were popularly looked on as forbidden or at least dangerous ground, to be trespassed on only—as an early *Murray* put it—by persons with a tendency to unsound mind, kept alive and handed on the craft that enables men to explore glaciers and climb great peaks. It was Couttet's contemporary and greatest friend, Auguste Balmat, who served Mr. Justice Wills for several years as leading guide in the expeditions which set the fashion of modern mountaineering. It was through Balmat also that I (or rather my parents, for I was a boy of eleven) made Couttet's acquaintance in 1856. Between that year and 1863 he travelled frequently with us. We went to many parts of the Swiss and Italian Alps where accommodation and means of transport were—to put it mildly—deficient thirty years ago. *Cogne*, *Zinal*, the Italian valleys of *Monte Rosa*, *Davos*, the back of the *Bernina*, the *Bregaglia*, *Livigno*, are a few among the 'Byways' that occur to me. Much of the enjoyment of these wanderings depended on Couttet, who was an admirable organiser and could always be depended on to get the best mules on fair terms, or to procure, and even sometimes to cook, whatever food the place provided. In Chapter I. of '*Alpine Byways*' (1861) my mother wrote:—'The comfort and indeed safety of such journeys as we have

enjoyed, depend so greatly upon the care and conduct of your guide, that I must gratefully acknowledge the services of our good and tried friend, Michel Alphonse Couttet, one of the best men on the Chamouni roll. He has almost invariably accompanied us, and has justified our implicit confidence in his judgment, quiet decision, and high tone of character.' In 'A Summer Tour in the Grisons' (1862), p. 7, our guide is again mentioned:—'We were as usual accompanied by our good friend Couttet. We knew that he was unacquainted with the mountain region which we intended to explore; but we were sure that his general knowledge of Alpine travelling would be useful, and we were not disposed to dispense with the comfort derived from his attendance. Couttet has now the advantage of being the only guide either at Chamounix or in the Oberland who is practically acquainted with the byways of the Bernina.'

As a mountaineer Couttet was not severely tested in these journeys. The Titlis and the Cima di Jazzi, the St. Theodul and the Segnes, the Pousset of Cogne, or the first ascent (by travellers) of the Davos Schwarzhorn; these were the sort of trifles to which my ambition was restrained. It was only in 1863, when Couttet was over sixty, that we attempted the Grand Paradis, crossed the Col du Géant, and ascended Mont Blanc together. In the last expedition I was introduced by Couttet to François Dévouassoud, whom he had to some extent trained. I do not think Couttet ever did much high climbing elsewhere than at Chamounix. His experience was gained in frequent ascents of Mont Blanc, on Monte Rosa, and on a few of the glacier passes. The difference between him and the next generation of guides was, I should say, that he was far more punctilious and less adventurous above the snow level. Even in the valleys he was by nature sagacious, deliberate, and full of well-weighted maxims. On the heights he assumed a tone of command; he acted as if he were a general in a hostile country where the rules of war must never for a moment be relaxed. There must be a guide for each traveller. The rope must be always used and kept taut, the steps must be deeply cut, the tracks of stones and avalanches given the widest possible berth. He was impressed himself and impressed others with the strangeness and romance of the situation in any high expedition. He continued to act as a guide outside his own valley, where he was disqualified on the ground of age by the rules of the Company, until 1870. But he did not, as far as I know, attempt any climbing after 1863.

Couttet was of a patient, manly, and singularly high-minded and upright nature. He had many troubles in one part of his life, which he bore with simplicity and courage. His old age was active, and cheered by the care of his remaining children and the sympathy of several English friends, amongst whom I may mention the family of the late Rev. Stephen Hawtrey, of Eton College, to whom Couttet was much attached.

DOUGLAS W. FRESHFIELD.

NEW EXPEDITIONS IN 1886 (*continued*).*Dolomites.*

CRODA ROSSA OR ROTHWAND (3,133 mètres=10,279 feet). *October 8.*—Herr August Lorria with Michael Innerkofler, of Schluderbach, followed the usual route up this peak from Schluderbach as far as the valley N. of the Col Freddo, known as the Castello del Val Buones. Instead of continuing by the ridge between this valley and that of Monticelli or R. Sella (the ordinary way) they climbed up over *débris* to a point directly beneath the summit, near the base of a red gully in the mountain. They made their way up this narrow gully, which is not difficult, save at one point where it is closed by a great block of rock fallen from above. Then they came to a shelf of *débris* which from below has the appearance of a red hole. They thus gained the dark red wall, whence by a cleft, smooth slabs of rock, an ice couloir and chimney, they gained the summit in 2 hrs. 10 mins. from the Castello. This route, according to Innerkofler, has been taken once previously, but there seems to be no record of it in Alpine literature. It offers a very interesting climb, but much more difficult than the ordinary route. Times: 4.55 up from Schluderbach, 3.52 down.

ALPINE NOTES.

ALPINE EXHIBITION AT LIVERPOOL.—The managers of the Liverpool Jubilee Exhibition have decided to devote a portion of their 'Exploration' Court to an Alpine Court, and have asked for the assistance of the Alpine Club. The Committee have agreed to support the undertaking by the loan of pictures, maps, &c., belonging to the Club, and have appointed Messrs. C. Pilkington, Conway, Gardiner, and Walker, a sub-committee, with the President and Hon. Secretary of the Alpine Club to act on behalf of the Committee.

Any member willing to lend pictures or other interesting Alpine objects is requested to communicate with Mr. J. G. Thrupp (Commissioner for Exploration Courts), Jubilee Exhibition, Liverpool, or with Mr. Horace Walker, South Lodge, Prince's Park, Liverpool.

THE INDEX SCHEME.—The draft of the index is making good progress, most of the Editor's helpers having sent in their volume indexes long before the expiration of the period fixed. It has been determined to include in the index the three volumes of 'Peaks, Passes, and Glaciers' (as well as the 'Knapsack' edition of vol. i.), which, though not officially published by the Alpine Club, are practically the early form of the 'Alpine Journal,' and form with it the only complete connected view of the doings of English climbers since the foundation of the Alpine Club.

MONTE ROSA FROM THE SOUTH.—The attention of the reviewer of the Italian 'Bollettino' in the last number of the Journal (p. 203) has been called to a note in 'A. J.' vii. 218, which he had overlooked. It runs thus:—'Mons. M. Déchy wishes it to be stated that, in speaking of his ascent of Monte Rosa as a new expedition he did not mean to

imply that the top had not previously been reached from the Monte Rosa Glacier. What he wished to point out was, that his ascent was the first which proved that the mountain could be easily reached from the Val di Lys.' In other words, M. de Déchy followed the Lysjoch route some way down on the Swiss side, and then reached a point just above the *Sattel* by a route which was made independently, but which was only a variation of Messrs. Digby's and Heathcote's route of 1868, and is so reckoned by Mr. Conway (*Zermatt Pocket Book*, p. 51). The reviewer wishes also to point out that the main object of Signor Grober's paper was to stimulate his fellow-countrymen to follow M. de Déchy's route—a most praiseworthy endeavour, in which we hope that he will succeed, though it is to be regretted that his paper is disfigured by such serious misstatements of historical facts relating to the ascent of Monte Rosa from the South. It may also be pointed out that the whole of the S. and S.W. faces of the Höchste Spitze of Monte Rosa are in Swiss territory, and that they can only be gained from Italy by crossing the Lysjoch, the Sesiajoch, or the Grenz *Sattel*, so that an ascent of Monte Rosa from the South cannot, strictly speaking, mean an ascent by the Italian face, though the starting-point of the expedition may well have been some place on the Italian side of one of the minor peaks of the Monte Rosa group.

THE RECENT ACCIDENT ON THE MATTERHORN.—The Editor has received the following letter (dated March 14) from Mr. J. B. Mercer:—

'My attention has been drawn by friends in the Alpine Club to a letter from Messrs. King and Wills, in the "*Alpine Journal*" of November 1886, in reference to the accident on the Matterhorn last August, in which they regret that the first party "raised no alarm" on its arrival at Zermatt, and also that "all of us were in ignorance that there were other parties on the mountain at all."

'Inasmuch as the first party alluded to consisted of my two guides, Franz Anthamatten and Joseph Furrer (both of Saas), and myself, I may perhaps be permitted to show why none of us had reason to suppose that the other parties on the mountain were in any greater difficulties than I myself experienced.

'I reached the top at 7.30, Moser's party arriving there at 7.50, all four parties having left the hut about the same time; and we commenced the descent at eight o'clock, meeting the third and fourth parties about twenty minutes down, still ascending, thus showing that they were slower than myself. At any rate I had no reason to suppose that they would not all at least reach the lower hut before night. When I was about three-quarters of an hour above the hut I shouted, and was replied to by the Dutch party, who had previously shouted that they had heard the party above them.

'I reached the hut at nine minutes past two, and Zermatt soon after 4.30 P.M. I went to bed about 9 P.M., and was much surprised on coming down the next morning to hear that none of the other parties had arrived, and that a rescue party was then just starting. There was nothing to show that there was any cause for alarm, or that any interference on my part was necessary; and my two guides, both experienced men, evidently thought there was no danger, for they did

not refer to the other parties at all during the evening; and this is borne out by the hour at which I arrived at Zermatt, and by the fact that so many other parties were out on different mountains, all of whom arrived back in reasonable time, as pointed out by Mr. Schuster in his letter in the February number of the "Alpine Journal."

'I cannot help thinking that, had Messrs. King and Wills been in my position, they would not have thought it necessary to raise any alarm, which they regret in their letter was not done. It is evident that Mr. Seiler must have been aware that there were other parties on the mountain, for he had been consulted as to the engagement of two guides by Mr. Davies himself, as stated in his letter to the "Times" of August 28.'

A TABLET TO THE MEMORY OF SIR HUMPHREY DAVY.—The Carniola section of the German and Austrian Alpine Club has resolved to put up on the Old Posthouse at Wurzen, the favourite headquarters of Sir Humphrey Davy, a tablet to commemorate his services in making known the S.E. Alps of Austria and in attracting visitors thither.

A. LORRIA.

HUTS IN THE EASTERN ALPS.—The Munich section of the German and Austrian Club is building a hut on the Watzmann. A large hut in the Pflerschthal (Stubaierner) will next summer be built by the Magdeburg section, and another by the Frankfort section on the Gejatsch glacier, three or four hours higher up than the Gepatschhaus, built by the same section some time ago.

A. LORRIA.

THE 'OLD MAN OF SKYE' BY THE WEST EDGE.—Messrs. C. and L. Pilkington made, on August 18, 1880, the first ascent of this point, called the 'Inaccessible Pinnacle,' by way of the eastern side.* In company with Mr. A. G. Parker I succeeded on August 19, 1886, in making the same ascent by the western edge. The N. face of the W. edge is broken by three ledges, the highest of which slopes unpleasantly outwards. It is but a step from the first ledge to the second, from which the highest is easily reached. The only difficulty—hardly worthy of the name—consists in crossing the sloping ledge and working on to the W. edge of the Pinnacle. The whole climb is about seventy feet, and takes less than five minutes. The attention of climbers in Skye may be called to a pretty little chimney to the left (east) of the sloping ledge, the foot of which might be reached from the ledge; the rest would be easy work and give an interesting variation in the W. climb. The south face too deserves attention, for it is much more broken up by ledges than it appears to be from below. The north face looks as impracticable as overhanging rocks can look.

A. H. STOCKER.

THE FIRST ASCENT OF THE MÖNCH.—It is curious that a cowl of mystery should have hung, chronologically, over the head of the Mönch as regards the *date* of the first authenticated ascent of this mountain and as to the members of the party who made it. The Rev. Coutts Trotter and the late Mr. Macdonald, each of whom have written articles on the Mönch in the first volume of the 'Alpine Journal' (pp.

* *Alpine Journal*, vol. x. p. 111.

82-86, 423-429), agree in fixing 1858 as the year of Dr. Porges' ascent, which is universally recognised as the first authenticated one. Mr. Coutts Trotter moreover remarks that 'Peter Bohren, who was one of the guides on the only previous ascent (*i.e.* in company with Dr. Porges), had reached the summit in about two hours and a half from the Col,' &c.; and Mr. Macdonald accentuates this reference to Peter Bohren's alleged presence on the occasion of the first ascent by quoting Mr. Coutts Trotter's words in regard to him.* Mr. Ball assigns no exact date either as to month or year to Dr. Porges' ascent of the mountain, nor does he give the names of any other guides besides Christian Almer who were members of Dr. Porges' party. 'The first authentic ascent was by Dr. Porges, of Vienna, with Christian Almer and other Grindelwald guides.' †

In 'Modern Mountaineering,' ‡ Professor Studer§ is cited as the authority for Peter Bohren having accompanied Christian Almer and Dr. Porges in the first ascent of the Mönch, and also for fixing the date as August 15, 1857. 'They slept an hour below the Mönchjoch, and reached the top by the Mönchjoch arête after cutting 300 steps in ice at 3 P.M., having been eleven hours from their bivouac. The weather was unfavourable and the snow in bad condition, which may partly account for the enormous time consumed.'

It turns out, however, on incontestable evidence that although the year last given, *viz.* 1857, is the correct one, as I have ascertained from Dr. Porges himself, as well as from Christian Almer himself in the course of a very recent interview with him (the latter's 'Führer-Buch' giving August 15, 1857, as the date), Peter Bohren was at that moment 'over the hills and far away' from the Mönch and its neighbourhood, being on August 15, 1857, waiting at the Riffelberg with Mr. Eustace Anderson (at which hôtel they had arrived on the 14th) for fine weather to enable them to ascend Monte Rosa. Peter Bohren's original 'Führer-Buch' is on the table before me as I write, and Mr. Anderson's sign manual is attached to the above statement as to their whereabouts together on the day and in the year named.

Christian Almer states that the guides who actually accompanied Dr. Porges were himself, Ulrich Kaufmann (who is Christian Almer's brother-in-law), and Christian Kaufmann (long since dead). It is odd that Peter Bohren's name should have been thus erroneously associated with the first ascent of the Mönch by so many 'authorities.' He was the principal leader on mountain expeditions in the neighbourhood of Grindelwald at that period, and this fact must be taken to account for the error having crept in. F. T. WETHERED.

NOTES ON SOME PEAKS AND PASSES IN THE OBERLAND.—The following note by Mr. G. E. Foster appeared on p. 155 of vol. iv. of the 'Alpine Journal':—

'1868, July 21.—With Hans Baumann and a porter from Grindelwald I left the chalet beside the Lower Grindelwald glacier about

* *Alpine Journal*, vol. i. p. 125.

† *Central Alps*, ed. 1870, p. 111.

‡ *Alpine Journal*, vol. viii. Appendix, p. 80.

§ *Ueber Eis und Schnee*, i. 144.

3.30, and crossed the cirque of the Viescherhörner, between the lower Viescherhorn and a point called the Pfarrerhorn; then bearing to the left over snow slopes, ascended some steep rocks which are much swept by avalanches, and reached the col on the left of the Ochsenhorn at 4.15 p.m., the last slope having taken over six hours to cut steps up. Ascended the Ochsenhorn in fifteen minutes from the col, returning to which we descended to the Viesch glacier by some awkward broken rocks and reached the Rothhorn cave at 8.45. The pass I propose to call the Ochsenjoch.'

I had never been able to make out quite to my satisfaction the exact route followed on this occasion; and when, on August 5, 1874, I crossed what my leading guide, Christian Almer, called the Ochsenjoch (ascending the Ochsenhorn from it in a few minutes) it seemed to me that this pass was identical with that commonly known as the Viescherjoch.

Mr. Foster has lately, at my request, been looking up the matter and examining maps and photographs. I understand that he is quite clear on two points—

(1) That, having started from the Bärenegg hut, he left the Strahl-eck route *before* reaching the Enge, striking up directly to the N. ridge of the Ochsenhorn, which was gained at a point a little to the S. of the Pfaffenstöckli (3,121 mètres) of the large Federal map.

(2) That from this point he did *not* follow the N. ridge to the summit of the Ochsenhorn, but bore round to the left and reached a small snow plain, from which a very long piece of step-cutting led him to a point on the main ridge just E. of the Ochsenhorn (3,905 mètres = 12,812 feet), which was climbed by its E. ridge in fifteen minutes.

Mr. Foster is hence inclined to think that this *second* pass was the Viescherjoch, crossed on July 30, 1862, by Mr. Leslie Stephen and a party of friends,* who, however, reached it from the Kastenstein by way of the upper Eismeer, the 'Grünenwäng,' and the first glacier flowing down E. of the Ochsenhorn. This point was also reached from the Kastenstein on July 28, 1864, by Herr von Fellenberg,† who identifies it quite certainly with the Viescherjoch (one of his guides—Peter Baumann—having also been with Mr. Stephen on his 1862 expedition) and thence made the first ascent of the Ochsenhorn. In 1874 I certainly followed the route taken in 1862 and 1864, which is illustrated by a diagram and described minutely in Herr von Fellenberg's book.

Hence I should propose to retain the name of Viescherjoch for this pass, assigning that of Ochsenjoch to Mr. Foster's first pass across the lateral ridge between the Pfaffenstöckli and Ochsenhorn. Mr. Foster kindly allows me to state that his views on the whole question are entirely in accordance with mine.

Another topographical point relating to this group which has long troubled me has also just been set at rest. In the supplementary

* *Alpine Journal*, vol. i. pp. 105-8; *The Playground of Europe*, pp. 152-8.

† *Das Hochgebirge von Grindelwald*, p. 122 sqq.

volume of Herr Studer's 'Ueber Eis und Schnee'* I read that on August 2, 1878, Mr. E. R. Whitwell, with Christian Lauener and Peter Schlegel, made the first ascent of the Viescherhörner from the N. side, though it was uncertain which peak was reached. This statement was based on a short note in the 'Neue Alpenpost' (viii. 62), which in its turn had taken it from the 'Oberland' newspaper. Mr. Whitwell has kindly sent me his recollections of his expedition. Starting from a bivouac on the Zäsenberg, they struck the N. ridge of the Ochsenhorn and followed it all the way to the summit of the peak, chiefly over rocks, partly by ice. The last part was very steep and climbed in dense mist, which compelled the party to descend to the Eggischhorn by the ordinary route over the Grünhornlücke.

Mr. Whitwell would thus seem to have followed Mr. Foster's route to the Ochsenjoch (properly so called) and then kept straight up the ridge, instead of bearing round to the left and mounting to the Viescherjoch. In fact his route is precisely that followed, independently, on August 17, 1886, by Mr. J. Stafford Anderson.†

I am now quite satisfied in my own mind as to the exact routes followed in 1868 and 1878 (and 1886), and am induced to put these notes before the readers of the Journal to avoid future confusion and to help the Alpine historian of the Oberland.

I take this opportunity of clearing up the topography of the great S. spur of the Aletschhorn, which has been much confused owing to changes of name on the large (or Siegfried) and smaller (or Dufour) Federal maps. There are three main peaks on it.

(1) Of these the highest is estimated by both maps at 3,746 mètres. It bears no name on the Dufour map, though the ridge descending from it to S.E. is called (on both maps) 'Geissgrat'; on the Siegfried map the point is named 'Sattelhorn,' a name transferred from a peak of 3,270 or 3,274 mètres to the S.E. This is the peak of which I made the first ascent on August 26, 1880,‡ and which, following local usage, I called 'Geisshorn.'

(2) To the S.W. of No. 1 lies a peak, marked 3,666 on the Dufour map and 3,701 on the Siegfried. The latter map calls it 'Rothhorn,' a name which occurs so frequently that it may be well to get rid of it when possible. This peak is properly the highest point of the Fusshörner group, and was ascended for the first time on August 28, 1871, by my aunt, the late Miss Brevoort, Mr. S. P. Cockerell, and myself, with the dog Tschingel.§ Our ascent was made from the Triest glacier.

(3) Finally, we have the point marked 3,648 on the Dufour map and 3,628 on the Siegfried map, in each case forming part of the Fusshörner group, of which it is properly the second peak. The first ascent has not hitherto been recorded; it was made on September 21, 1876, by my aunt, the late Miss Brevoort, with Mr. W. Little, the guides being two Belalp men, Moritz Salzmann and Peter (?); the

* Vol. iv. p. 45; published in 1883.

† *Alpine Journal*, vol. xiii. p. 122.

‡ *Ibid.* vol. x. p. 98.

§ *Ibid.* vol. v. p. 276.

cook of the Belalp hotel and Tschingel were also of the party. The ascent was, I believe, made by way of the face above the lower part of the Ober Aletsch glacier. In 1886 the ascent was repeated by Mr. T. P. H. Jose with Anton Walden, who ascended from the Ober Aletsch glacier by way of the S. face and the left-hand ridge, and found traces of a cairn on the summit. This is the peak which is so conspicuous from the Belalp inn as, apparently, the culminating point of the great rock wall of the Fusshörner. W. A. B. COOLIDGE.

WINTER EXPEDITIONS.—The following letter appeared in the 'Standard' of February 8:—

'It may be of interest to some of your readers to hear that the ascent of one of our highest peaks, the Mönch, has been made this week.

'A Mr. H. Woolley, from Manchester, left Grindelwald at six o'clock on Monday last, January 31, accompanied by two guides, for the Club hut on the Mönchjoch. They reached there at seven P.M., and started next morning at six for the ascent of the peak. They arrived at the top of the Mönch near midday, and were back at the Bär Hôtel, Grindelwald, at ten o'clock the same evening.

'Mr. Woolley has found the ascent not any more difficult or dangerous than in summer. Up to the Club hut the party found the ascent rather more fatiguing than in summer on account of the snow. From the hut to the top the snow was in good condition. From the cold the party did not suffer, and the view from the mountain was very fine, owing to the bright, fine weather and the clear winter air.'

We learn that the guides were Ulrich Almer and Christian Jössi.

The Mönch had been already ascended in winter by Herren F. Bischoff and R. Bohren with one of the Michels, Peter Bohren, and Peter Baumann on January 24, 1874.*

On March 8 Herr Emil Boss and Ulrich Almer started from the Schwarzegg hut and effected the first winter ascent of the Finsteraarhorn. They followed the ridge running up from the Agassiz Joch. The snow was in excellent condition on the way up and the temperature on the summit agreeably warm. On the descent, effected by the ordinary route, the snow was in a very bad state, and it was not till about 4 A.M. on the morning of March 9 that the party reached Viesch, having descended the entire length of the Viescher glacier. The three highest summits of the Mont Blanc, Monte Rosa, and Oberland chains have now been scaled in winter.

We hear also that two Englishmen with two guides crossed the Col du Géant on January 16.

THE FIRST ASCENT OF THE JUNGFRAU.—The following account, taken from the old travellers' book at the Grimsel and preserved by J. R. Wyss,† is interesting as giving the first impressions of the first conquerors of the Jungfrau, who later wrote a full account of it:—'On July 30, 1811, the undersigned, fully equipped, passed by this place with the intention of climbing the hitherto unascended Jungfrauenhorn

* *Alpine Journal*, vol. vi. p. 413; *S. A. C. Jahrbuch*, vol. x. p. 670.

† *Reise in das Berner Oberland* (1817), vol. ii. pp. 753-4.

and of exploring the connection of the great sea of ice with other glaciers. On August 5 they returned to the Grimsel, after having succeeded in planting a black flag as a signal on the highest peak of the Jungfrau, Saturday afternoon, August 23 [misprint for 3]. The nearest and best way to reach the mountain is from the Lötschenthal, in the Valais, over its glacier. The undersigned had the good fortune, in this very favourable year for glacier journeys, of reaching the foot of the last peak without great difficulty. They must, however, point out that, as the glaciers change every year according to the weather, in a more unfavourable year than this the way they took to the foot of this last peak may be impassable; so that each time (for even the most experienced chamois hunters never venture for many hours so far on the sea of ice) it will be necessary to discover the way to the spot where one is obliged to spend one or more nights on the glacier, for this must be done twice if one wishes to attain the object of the journey. The ascent of the highest peak is, on the other hand, only to be made in face of almost insurmountable difficulties and of great danger. From the summit and neighbouring heights the junction of all the glaciers may be seen which unite behind the Jungfrau and the Mönch in the great sea of ice. JOH. RUD. MEYER, jun., of Aarau; HIERONYMUS MEYER, of Aarau.'

MADAME CARLE AND HER MEADOW.—All who have travelled in Dauphiné will remember the stone-strewn plain above Ailefroide, where the ice-streams of the Glacier Blanc and the Glacier Noir formerly united. This plain is commonly known as the Pré de Madame Carle; but the question who this lady was has remained a mystery till M. Aristide Albert (a well known Dauphiné antiquary) published a note on the subject in No. 22 (April, 1887) of the 'Bulletin de la Société d'Etudes des Hautes Alpes,' pp. 143-4. It seems that one Geoffrey Carle, President of the 'Parlement' or Supreme Court of Justice of Grenoble from 1500 to 1516, bought from the Luzerne family the 'Bâtie' or castle of Vallouise, and many estates and rights in the same valley. His son Anthony died young, and Anthony's widow, 'demoiselle Louise Sereyne, dame Carle,' managed his estates as the guardian of her ten children. This was the lady whose name was given to the pasturages above Ailefroide, then probably luxuriant, now covered with stones, save the rapidly diminishing little forest of pines. Madame Carle was thus a real historical person, and not the creation of legend, as one was often led to suppose.

MAPS OF THE ALPS.—For a general view of the Alps as a whole, I know of nothing better than sheet 52 of the second edition of Richard Andree's 'Allgemeiner Handatlas' (Velhagen and Klasing; Bielefeld and Leipzig; 120 maps for 24s.), now in course of publication. Though only on a scale of 1 in 2,500,000, it is very clear and marvellously accurate, all the very latest authorities having been utilised. Sheet 53 (on a scale of 1 in 1,000,000) comprises all the Western Alps from the Lake of Geneva and Monte Rosa to the Mediterranean, and is specially good in the case of the tangled ranges on the French side of the range. It is astounding and most gratifying to find a publisher willing to devote special attention to

these neglected districts, and with such good results. All the great peaks of the Graian, Paradis, Tarentaise, Dauphiné, Cottian, and Maritime Alps are *correctly* represented, with their right names and right heights, the misprint of 3,100 mètres for 3,400 in the case of the Aiguille de Chambeyron, and the omission of the Charbonel (3,760 mètres), the monarch of the Western Graians, being the only ones I have noticed. It is a great boon to have a handy and accurate map of the Alps as a whole, in particular one of the Western Alps, and some members of the Club may be glad to have the existence of such maps pointed out to them. These two sheets are very probably included in the supplement (to the first edition) of 33 new maps, which can be procured separately for six shillings. W. A. B. COOLIDGE.

A MEDIEVAL PASSAGE OF THE GREAT ST. BERNARD.—The following lively description of Master John de Bremble's sufferings on the Great St. Bernard in February 1188 is taken from a letter of his written from Lombardy to Geoffrey, the sub-prior of the monastery of Christ Church at Canterbury, of which house John was a monk:—*

' Pardon me for not writing. I have been on the Mount of Jove; on the one hand looking up to the heavens of the mountains, on the other shuddering at the hell of the valleys, feeling myself so much nearer heaven that I was more sure that my prayer would be heard. " Lord," I said, " restore me to my brethren, that I may tell them, that they come not into this place of torment." Place of torment indeed, where the marble pavement of the stony ground is ice alone, and you cannot set down your foot safely; where, strange to say, although it is so slippery that you cannot stand, the death (into which there is every facility for a fall) is certain death. I put my hand in my scrip, that I might scratch out a syllable or two to your sincerity; lo, I found my ink bottle filled with a dry mass of ice; my fingers too refused to write; my beard was stiff with frost, and my breath congealed into a long icicle. I could not write the news I wished.'

LECTURES TO GUIDES.—Several of the foreign Alpine Clubs have arranged for courses of lectures to be delivered to guides, or aspirants to the position of a guide, on various matters connected with their profession. For example, before the examination for guides' certificates at Interlaken all candidates are required to attend lectures extending over a week or more. But perhaps a larger audience of guides and would-be guides never assembled than at Innsbruck from February 27 to March 7, when a course had been organised by the German and Austrian Alpine Club. No fewer than 168 were present. The subjects of the lectures were glaciers, Alpine and local topography, how to read maps, the use of the compass, thermometer, and barometer, the rights and duties of guides in general, instructions how to act in case of an accident, Alpine clubs, guides' societies, guides' insurance, use of rope and axe, names of mountains, cookery, and forestry. The 168 were

* *Epistole Cantuarienses*, letter no. cxvii. vol. ii. p. 181, of the *Chronicles and Memorials of the Reign of Richard I.* in the Master of the Rolls' series (1865), quoted by Bishop Stubbs in his *Lectures on Medieval and Modern History* (1886), p. 128.

divided for the sake of convenience into six sections. The lectures are said to have been very much appreciated, particularly that on how to act in case of an accident, the zeal and interest shown being very great. A short examination (prizes being awarded) and a social evening concluded the proceedings. The Innsbruck section is to be congratulated on a distinct success.

REVIEWS AND NOTICES.

Zeitschrift des Deutschen und Oesterreichischen Alpenvereins. Jahrgang 1886. Band xvii. (München: J. Lindauer.)

THE strictly mountaineering portion of this volume becomes less every year. The most interesting papers are contributed by Herren Purtscheller, Lammer, Lorria, and Schulz, and have mostly been already referred to in the pages of the 'Alpine Journal.'

Herr Purtscheller ascended all three peaks of the Watzmann in a single day from S. Bartholomä. The mountain on this side is accessible only by a long couloir with precipitous sides, and interrupted here and there by short steep faces of rock. Where these cannot be climbed the sides must be scaled in order to turn the obstacle. The mouth of the gully is in the face of a cliff, and the ascent by this route is thought to be possible only in the early summer, when the snow-slopes reach up the cliff to the ravine. Herr Schück, with the guide Köderbacher (of Ramsau), climbed the central and highest peak (2,714 mètres = 8,905 feet) on this side (S.E.) in 14 hrs. on May 6, 1881. Köderbacher proposed to Herr Purtscheller to make a trial in the autumn. Leaving S. Bartholomä in the early morning of October 28, 1883, they got into the couloir only by a difficult and dangerous traverse, 2 hours being consumed in ascending about 50 mètres. In spite of Köderbacher's powers the first cliff could not be surmounted. The chasm between the snow and the walls was impassable, and at 9.30 A.M., after 8 hours' labour, they were forced to return. A second attempt was made on July 13, 1885, with the guide Preiss (also of Ramsau, and said to be quite as good a cragsman as Köderbacher). The access to the gully was easy, but the cliff which stopped them before was again found impassable. The side of the gully was climbed by a crack scarcely affording room for the tips of their fingers. In this precarious position Herr Purtscheller had to take off the guide's shoes, and he got up with the greatest difficulty. 'Those were exciting moments,' says Herr Purtscheller, 'such as I have seldom experienced in the Alps.' They soon had to enter the gully again. They had again to take off their shoes to surmount a second cliff. Here, whilst Herr Purtscheller was watching the movements of the guide above him, his footing gave way and he slipped down more than half a yard. He recovered his hold, but involuntarily clutched the rope with his left hand, thereby giving Preiss a jerk, which might easily have been fatal to both. The latter, however, only laughed instead of scolding, and went on as if nothing had happened. The

difficulties now became less, and they reached a broad hollow out of which the peaks rise. The S. summit was reached at 1 P.M., 11 hrs. from S. Bartholomä. The traverse to the central peak—generally reckoned very difficult—seemed only an agreeable walk. They reached it at 3.15 and descended by the Gugl Alp to Ramsau.

The next day the same party ascended the Hochkalter (2,629 mètres = 8,626 feet) direct from the Wimbachthal. As in the case of the Watzmann the only approach is by a gully terminating in a cliff. The entrance is reached by crossing smooth slabs of rock at considerable risk.* The summit was reached in 7½ hrs. On their return they made the first ascent of the highest summit of the Steinberg ridge, which they called Blauesspitze. Thence by the Blaueis Glacier and the Scharten Alp they returned to Ramsau.

The adventurous descent of the Schreckhorn by the N.W. ridge made by Herren Lammer and Lorria is quite on a par with their rash ascent of the Dent Blanche in a snow storm.

Herr Schulz contributes an article on the early exploration of the Dauphiné Alps. This is tolerably complete, as far as it goes, from Ladoucette (Hautes Alpes, 1848) to Whympfer (1864); but he dismisses very briefly, on account of lack of space, the subsequent explorations, referring only to the ascent of the western peak of the Meije in 1877 by M. de Castelnau, with the Gaspards, and to Mr. Coolidge, who has explored this group for seventeen years 'as no single climber ever explored a single district.' His references to modern maps are very complete, but the earliest old map which he mentions is that of Bourcet (1754), whereas the new 'Guide to Dauphiné' (soon to be published) will, we believe, reveal to us maps of a much earlier date. The article concludes with an ascent of the Barre des Ecrins by Herren Schulz and Purtscheller, without guides, on the same day (August 13, 1885) as a party of French officers.

Herr Grohmann gives an account of some of his first ascents (1863–1865) in the Dolomites, between Ampezzo and Caprile. Herr Petersen gives us recollections of a passage of the Col du Géant. The enterprising Frau Tauscher Geduly describes a traverse of the Fluchthorn from the Futschöl pass to the Jamthal hut. Herr Seeland contributes an additional chapter (number vii.) on the Pasterze Glacier.

Many of the articles on general subjects are of the highest interest and would deserve a lengthened notice. Space, however, allows only a mere enumeration of them.

Dr. K. Haushofer writes on the 'Origin of the Alps;' Dr. J. Hann on the 'Distribution of Temperature in the Eastern Alps' (to this is appended a table of the mean monthly and annual temperatures at no less than 264 stations); Herr C. Gsaller on the 'Orometry and Nomenclature of the Stubai Group;' Herr Brückner on the 'Höhe Tauern and its Glaciers;' Herr Hoffmann on the 'Frühmesserbuch of Martell' (a series of notes by a Pfarrer on local history, legends, and customs); Herr Grasberger on ballads, dramas, and artistic

* The descent by this route was effected by Herr Felix with the same guide in September 1881.

productions in the Alps; Herr Waizer on 'Customs at Birth and Death in Carinthia;' Dr. Lieber on 'Country Doctoring in Tyrol;' Herr Zimmeter on the 'Marmot.'

Dr. Oster discusses the route and object of an expedition made by Philip III. of Macedonia in 181 B.C. Herr Spichler contributes a second article on the Lechthal; Dr. Frischauf one on the Speikboden (2,519 m.), near Taufers, to which is annexed a panorama by Herr Ritter von Siegl, of Graz.

The Wendelstein (1,849 m.), E. of the Schlier-See and N. of Baierisch Zell, the most frequently visited summit of the Bavarian Alps, has nearly a quarter of the volume devoted to it. Its name, history, geography, economical conditions, population, &c., are treated of by Dr. Ratzel, its meteorology by Dr. Erk, and its botany by Dr. Dingler.

With this volume, besides the above-mentioned panorama, appear sheet No. 2 (Berchtesgaden) of the special map of the Berchtesgaden Alps, a panorama from the Wendelstein, and various views of mountain peaks. Amongst these several produced by a process in photography called 'Lichtkupferdruck' are so dark as to produce on the eye a disagreeable effect.

J. S.

Der Föhn: ein Beitrag zur orographischen Meteorologie und comparativen Klimatologie. Von Dr. Gustav Berndt. (Göttingen: Vandenhoeck & Ruprecht. 17s.)

In this book Herr Berndt renders good service to the science of meteorology, as well as to the subject of the Föhn, which is specially discussed in it. Without presuming to offer any new theory as to the origin of this remarkable wind he has collected together and examined the principal observations which have been made on it at many different times and places. He begins by reviewing the different theories which have been proposed, and dismisses as quite untenable that which assigns its origin to the heated desert of the Sahara (which was at one time supported by Sir Charles Lyell), as it is sufficiently evident that a wind arising there and moving northwards would in virtue of the earth's motion be converted into a S.E. wind somewhere about Asia Minor. He finds the theory of Dove (supported by Mühry, Hann, Billwiller, and others) the most reasonable—that the Föhn is caused by the presence of a barometrical depression in the N. or N.W. in a line between Ireland and the Bay of Biscay, the effect of such a depression being to produce a suction of air from the circumference to the centre. The air being thus drawn from the valleys lying on the N. slopes of the Alps, in order to restore the equilibrium masses of air rush violently from the S. side over the passes, gaining heat and dryness as they descend. The French meteorologists (Herbert, Feyes, and others) combat this view, on the ground that the descent of the air, after passing the crest of the ridge, is contrary to the laws of force, and assign the origin of the Föhn to local depressions produced by the contact of the main cyclone with the Alps. The existence of such local whirls is, however, denied by the followers of Dove. The author admits that there are many points in connection

with the Föhn which Dove's theory does not sufficiently explain, and declares that much patient observation is required before the question can be definitely settled. He then proceeds to discuss in detail several points.

I. *The Topography of the Föhn*.—This is mainly confined to the portion of the chain of the Alps lying between Mont Blanc and the Bernina group. In the Eastern Alps it occurs with less frequency and violence, and W. of Mont Blanc it does not occur. This may, however, be the result of imperfect observation.

II. *Its Periodicity*.—Sufficient observations have not yet been made to prove that this wind is oscillatory over periods of years. It is certain that in the course of each year it occurs most frequently and violently in December and March, and is weakest in the summer.

III. *Its Phenomenology*.—In this section, which is by far the most important, Herr Berndt collects, tabulates, and compares the phenomena—meteoric, optical, and acoustic—which precede the Föhn; also those which accompany it—the variations in the pressure of the air and in its motion; the variations in temperature, saturation, &c. The barometrical observations in particular support Dove's theory, it being plain that when a south Föhn is raging the pressure is lowest in the north-west, and increases towards S.E. until in Southern Italy it is above the normal; the reverse is the case with a north Föhn when the centre of depression is over the Mediterranean. Under the three heads above mentioned there are introduced many interesting details of Föhn storms, particularly those of September 1866 and of November 1867. It seems quite established that the high stations so much recommended in the winter owe to the Föhn the clear skies and mild temperature which they enjoy often for weeks together whilst the plains of Switzerland are in fog and frost.

The work is illustrated by a general map of the parts of Switzerland subject to the Föhn, of the variations of the barometer and thermometer during the storm of September 1866 and of the distribution of temperature and moisture in the same storm; three maps of the Isobars in the storm of November 1867, and two of the variations of temperature at Trogen, in Appenzell, on December 7, 1869, and December 25, 1870. The succession of waves of alternately hot and cold air which characterises the Föhn is here remarkably seen. On December 6, 1869, between 1 p.m. and 7 p.m. the thermometer fell no less than three times to 12° Fahr., whilst the preceding and intermediate temperatures were 45° Fahr. and 32° Fahr.; whilst on December 25, 1870, in the space of 11 hours there were no less than seven similar changes, the extremes varying from 32° Fahr. to 1° Fahr. Dr. Berndt's work is one of the highest interest and should be read by everyone interested in the science of meteorology. J. S.

Rifugi e Guide nelle Montagne Italiane. Da F. G. and S. C. (Turin : Candeletti, 1885.)

Les Chalets et Refuges dans les Alpes Dauphinoises. Par Henry Duhamel. (Grenoble : Xavier Drevet, 1886.)

Schutzhütten und Unterkunfthäuser in den Deutschen und Oesterreichischen Alpen. Zusammengestellt von Josef Rosenthal. (Vienna : 1887.)

These three pamphlets have a similar end in view—a description of the exact position of and accommodation afforded by the Club huts built by several of the Alpine Societies.

The first on the list describes minutely no less than forty-one huts in the Viso, Mont Blanc, Monte Rosa, Bernina, Adamello, and other districts, all of which are built and maintained by the Italian Club. Notices too are given of thirteen small mountain inns, which are mainly dependent on mountaineers for their continued existence. Finally, we have a rather ambitious attempt to give the names of all the guides in every part of the Italian Alps, from the Viso to the Dolomites and Apennines. It seems very fairly full and accurate (though Bois' two little rooms at Fornet, in Valgrisanche, are omitted), but the compilers acknowledge that there are many gaps, and would gladly welcome any further information, which is to be sent to the headquarters of the Italian Club (Turin, Via Alfieri, No. 9). This is a very useful booklet, and must have cost enormous labour to draw up.

M. Duhamel describes all the huts in the Dauphiné Alps, whether built by the different sections of the French Club or by the Société des Touristes du Dauphiné. These are no fewer than twenty-four in number, besides several small mountain inns more or less subsidised by one of the Alpine Societies. In the almost total absence of decent inns in the district—though of late years there has been a marked improvement in this respect—good huts are essential, and with them Dauphiné is now well provided. The Refuge Cézanne has been rebuilt at the entrance to the Pré de Madame Carle, and a hut has replaced the uncomfortable Kastenstein-like hole dignified by the name of Hôtel Tuckett. We hope that the Refuge de Provence, on the Pelvoux, will soon be repaired—otherwise it will vanish entirely—and that the Refuge de l'Alpe will speedily be enlarged so as to accommodate the rapidly increasing number of travellers who seek shelter therein. How long too will it be before a small inn is opened at Ailefroide ?

Finally we are indebted to the German Club for a very compactly arranged eight-page leaflet giving some details as to all the huts and small mountain inns in the Eastern Alps from the Vorarlberg to the Karawankas Alps. In each case the approximate height is given, as well as the name of the Club (if any) which constructed the particular hut, the date of building, the starting-point in the valley, the distance from the peak to shorten the ascent of which the hut was erected, and a few facts as to the available accommodation and provisions. It is admirably done (as far as we can judge), the only improvement we can suggest being that the exact site should be indicated for the convenience of those visiting a district without previous local knowledge.

Such lists as these are very handy and convenient for mountaineers. Possibly the Swiss Club likewise issues a similar pamphlet, though it

has not come under our notice. If they were all to appear annually in June travellers could have the latest information as to the huts in the district which they propose to visit, for huts appear and disappear, and often their exact position is not known save to a few local men.

Europäische Wanderbilder—Wallis und Chamonix. Vol. i. *Wallis.* Von F. O. Wolf. Mit Illustrationen u. Karten. (Zürich: Orell, Füssli & Co., 1886. 8 francs.)

This guide-book to the Valais holds a middle place between the concise practical notes of Budeker or Tschudi and the romantic accounts to be found in the older editions of Murray. Its strong points are the great attention paid to local history, local legends and local customs, and the way in which all the most recent literature on the subject has been utilised.

The hurried tourist will not find herein the exact price of beds and dinners at certain asterisked inns, nor the precise beauties which he is to admire with the proper epithet attached to each; but anyone wishing to get a pretty full account of the Upper Valais as it was and as it is can scarcely hope for anything better than Herr Wolf's present volume, the matter of which is in strong contrast to the poor illustrations and to the district maps, the latter being only fairly clear and full. A special point, too, is made of the geology and botany of each valley. In fact, the work may be described as a collection of monographs of the valleys which make up the Upper Valais. Indeed, the book appeared in various parts, each part complete in itself—viz. *Von der Furka bis Brig*, *Brig u. der Simplon*, *die Visperthaler*, *Lötschen u. Leukerbad*, *Turtman u. Eifisch*.

More might have been made out of the early local history of Zermatt, but as a rule each valley is treated very fully and reference to the monographs in each case carefully given, so that any one wishing to investigate the subject fully knows at once what books to consult. We hope Herr Wolf will receive sufficient support in his undertaking to enable him to bring out his second volume, dealing with the Lower Valais and the tracks over to Chamonix and to Italy. It is a return to the guide-book of the eighteenth century to find so much space given to the political and social condition of a part of Switzerland, while the more purely Alpine part of the work is far fuller and more accurate than it was possible for the author of the 'Délices de la Suisse' or for Ebel.

Guide du Haut-Dauphiné. Par W. A. B. Coolidge, Henry Duhamel et Félix Perrin. Avec 6 cartes. (Grenoble, 23 Grand' Rue: Alexandre Gratier, 1887.) 32mo. c. 450 pages. (8s.)

That portion of the Alps commonly known as 'Dauphiné,' and comprising (generally speaking) the district S. and W. of the Mont Cenis railroad and W. of the Italian frontier, has had the misfortune to strike the earlier English explorers in an unfavourable light in certain respects. Hence the old proverb, 'Give a dog a bad name, then hang him,' has unfortunately been only too truly exemplified with regard to the great mountain regions of the departments of Isère and the Hautes Alpes. A great deal of the prejudice against this district was formerly owing

to the very rough inn accommodation and the poor fare to be obtained. Happily those days are past, and there is now a good chalet inn at the great mountaineering centre of La Bérarde, while the accommodation at La Grave, Ville Val Louise, St. Christophe, Bourg d'Oisans, and other places is now very fair, and with more encouragement would probably become still better. These improvements are largely owing to the fostering care of various sections of the French Alpine Club and the Société des Touristes du Dauphiné, who have erected no less than fourteen mountain refuges or huts from which the more lengthy expeditions can be conveniently made. Many of the valleys of Dauphiné present a barren and wild aspect, owing to the absence of trees, but with regard to the majestic nature of the great peaks of the group few districts in the Alps present grander forms or offer more interesting work to the mountaineer. Until recently the only guide books that gave any practical information about the mountaineering capabilities of the district were the French guide book 'Joanne' and Ball's 'Alpine Guide,' but the later editions of Baedeker and Murray have given condensed information regarding certain expeditions. Now that the Dauphiné Alps have been pretty thoroughly explored by certain members of the English and French Alpine Clubs a suitable time has arrived for the publication of a pocket guide book to the district, giving full information about every expedition hitherto made in it. Future mountaineers in Dauphiné will find themselves able, upon consulting the 'Guide du Haut-Dauphiné,' to obtain all particulars regarding any expedition they may contemplate, together with full reference to everything that has been written about each peak or pass. The book is divided into sections, of which the Central or Vénéon portion is the most important; the peaks and passes (230 in number) are tabulated in topographical order, and the number of expeditions from different points in the district can be seen at a glance. One great advantage this guide book has is that nearly all the expeditions described in it have been made by one or other of the three authors of the work, and in the case of some of the more important expeditions by all three of them; and the book itself is the outcome of many years of careful research and exploration. From the central point of the district, La Bérarde, the number of first-class expeditions that have been made is something amazing, and it is a fact that from no one given point in the whole Alps (Zermatt itself included) can so many expeditions be made as from this neglected little hamlet, which stands at a height of 5,702 feet above the sea. Carefully drawn maps, the work of M. Duhamel, one of the authors, are to accompany the volume, which is plainly but substantially bound in leather, which ought to be able to stand the rough wear and tear of mountain travel. It so happens that the only map quite ready in time for the publication of the book is the 'Carte des Voies d'Accès,' which, as its name implies, shows the most convenient manner of approaching the Dauphiné Alps from various sides. When completed, the other maps (which are to be published in sections, covering the entire district) will be delivered to subscribers, but it was considered best not to delay the book on account of their non-completion, in order that the 'Guide du Haut-

Dauphiné' might be available for the forthcoming Alpine season. The letterpress is very clear and easily legible, and is well set off by the wide margins of the pages. It is a matter of congratulation to the authors that the guide book has met with a most cordial reception both in France and Switzerland, and nearly the whole of the first edition has already been disposed of. Besides the great central portion of the district the 'Guide du Haut-Dauphiné' comprises sections or appendices on the Grandes Rousses, Aiguilles d'Arves, Combeynot, Sirac, and Chaillol groups, in which no fewer than 112 expeditions are more or less fully described.

In order to secure greater accuracy of description than could be compiled merely from notes, no less than about 7,000 photographs, the work of M. Félix Perrin and M. Henry Duhamel, have been taken, and although not published they have been of immense use in the compilation of the Dauphiné guide book. But it is mainly owing to the work of Mr. Coolidge, extending over seventeen years, that the exploration of this intricate, and in many ways difficult, district has at last become so far completed as to justify the production of the 'Guide du Haut-Dauphiné,' the result being that the hitherto neglected district of Dauphiné is now as well provided in the matter of maps and guide book as any other part of the Alps, if not better. The guide book in its entirety has been compiled, revised, and issued under the joint authorship of Mr. Coolidge, M. Duhamel, and M. Perrin, and has been printed and published by M. Alex. Gratier, of Grenoble, who has done it full justice in the matter of printing, binding, &c.; and the price at which the book is published, considering the quantity of matter contained, is very moderate. There are still some virgin peaks left in Dauphiné, as a perusal of the guide-book will show, and although nearly all the more interesting and difficult ascents have been accomplished, there are some new expeditions left which will task the utmost capabilities of the best mountaineers.

FREDERICK GARDINER.

Histoire de la Vallée et du Prieuré de Chamonix du X^e au XVIII^e Siècle.
Par André Perrin. (Chambéry: A. Perrin, 1887. 6 francs.) 8vo. 253 pp.

In 1879 and 1883 Mons. A. Perrin published two volumes of documents relating to the history of Chamonix before 1550,* a most valuable and interesting collection. These he has now supplemented by a smaller work, which gathers under several heads the details contained in the documents. His new volume is thus not a consecutive history but a succession of detached essays, perhaps the best way of dealing with a mass of material which, large as it is, is by no means complete or continuous. It is naturally very interesting, but it is not well written, and abounds in irritating misprints, which ought to have been avoided, seeing that M. Perrin is a publisher as well as an author. The most novel and striking point brought out is that the village of Chamonix existed before the priory, round which it is commonly said to have grown up; for it is inaccurate to state that the grant of 1091

* See *Alpine Journal*, vol. x. p. 167; vol. xi. p. 484.

is the deed of foundation of the priory. It was only the gift of the valley of Chamonix to the great Benedictine house of San Michele della Clusa, near Turin. In 1202 we hear of the 'chaplain' of Chamonix and of Peter the prior of Mègève, who in 1205 is called prior of Mègève and Chamonix, the first independent prior of Chamonix appearing in 1224. It never seems to have been a religious house of any great size or importance, though it gradually drew to itself most of the political and territorial power in the valley. Mons. A. Perrin describes at length how the status of the heavily burdened men of Vaudagne was raised by their submission to the prior, while by a similar act the free 'Theutonici' of the Val Orsine were degraded, the privileges of the village of Chamonix forming the mean and the standard of freedom. A very large part of the book is taken up with a minute discussion of these privileges confirmed by the prior in 1292, and several times later. It is really remarkable to see how a comparatively small number of men were able to maintain their immemorial rights as against the prior. For instance, the priors only succeeded in securing the police or jurisdiction in petty matters, but the criminal jurisdiction remained in the hands of the men—we may almost call them the burghers—of Chamonix; and it was by their act and authority that many sorcerers and heretics (before the Reformation) were burnt or otherwise put to death. In fact, this part of M. Perrin's book is really a study in the local institutions of the Middle Ages, and is of very great value.

The 'advocates' or protectors of the priory were originally the Lords of Fancigny, then the Dauphins by marriage, and then the house of Savoy in its senior or cadet branches. One prior only, Richard de Villette (1255-1296), seems to have risen above the level of his fellows, and to have displayed considerable activity and zeal in increasing the rights of his house. In 1519 the then prior resigned, and by a bull of Pope Leo X. the priory was annexed to the chapter of Salanches, which held it for a long time. It was not till 1786 that the inhabitants finally secured full exemption from all taxes, and general independence, on the payment of a large sum of money. We note that Mons. Perrin gives no details as to the buildings or exact site of the priory. Is it because even his painstaking researches have not unearthed any details on these points? Our space will not permit us to speak more fully of this work, which, despite all its shortcomings (and from an historical point of view, they are not slight), we can recommend to our readers, for it contains a vast amount of local information on a well-known valley. The Bishop of Geneva visited it as early as 1411, and it is to be hoped that no one will ever again repeat the fable of its 'discovery' by Pococke and Windham. There are many mentions of bears, chamois, marmots, bouquetins, and avalanches, but the allusions to the glaciers are very few and far between.

It is to be hoped that the publication of this book may stimulate others, interested alike in mountains and in history, to work up the story of some of the chief Swiss valleys. The rough material abounds, but the workers have hitherto been few, for the combination of a knowledge of history and minute personal acquaintance with the valley

which forms the subject of research, is scarcely to be found, save among the summer visitors, who might well employ their holiday in the useful as well as agreeable task of collecting information about their temporary homes. We can assure them that their labours will be rewarded by the discovery of very remarkable parallels to far better known lands and institutions.

Führer für Forschungsreisende; Anleitung zu Beobachtungen über Gegenstände der physischen Geographie u. Geologie. Von Ferdinand, Freiherr von Richthofen. (Berlin: Robert Oppenheim, 1886. 17s.)

This admirable work on those departments of physical geography and geology which are concerned with the morphology of the earth's surface is an expansion of a previous smaller essay by the same author, and is meant for the guidance of those dwellers in little-known lands, such as missionaries and merchants, who, without being scientific specialists, take an intelligent interest in natural phenomena, and may, if properly instructed, collect valuable data for the use of the specialists at home.

After a short preliminary account of the proper way of travelling, a brief notice is given of mensuration and cartography, and of the methods to be adopted in making meteorological and biological observations. The main part of the book is made up of two portions. The former of them treats of the operation on the earth's crust of external agencies, such as the sun, rivers, ice and glaciers, lakes and the sea; while the latter deals with what we may call internal changes in the earth's crust, arising from the nature of the stones and the lie of the strata.

We would specially call the attention of our readers to two chapters. Book ii., chapter 6, contains in the short space of fifty pages a very complete and instructive account of the way in which ice has modified the earth's surface, and is modifying it now, much space being given to hints how to discover traces of former glaciation. Book iii., chapter 15, sketches very shortly the origin of mountains and the influence on the shaping of each peak of the movements of the strata of which it is composed.

The book contains no illustrations, but a number of diagrams, while references to previous writers are few and far between, being made up for by the authority and vast experience of the author. It is rather cumbersome for travelling purposes, containing 730 pages (besides a good index), but as it is not meant for the knapsack that perhaps is no great objection. Very possibly some remarks contained in it may rouse casual readers to observe things around them and thus render great service to scientific men in Europe, who have enough to do in classifying other men's observations, and can scarcely spare the time to make observations themselves.

Die Alpen: Handbuch der gesammten Alpenkunde. Von Professor F. Umlauf. (Vienna, Pesth, and Leipzig: Hartleben, 1887. Pp. viii. 488. 11s.)

This work has been coming out in parts for some time past, and has only just reached its completion. It is an attempt—and an ambitious one—to give an outline of all that is known about the Alps from every point of view, though it is obvious that such an outline must be very concise, looking at the vast field to be covered and the

enormous amount of literature in existence on the subject. The author fairly admits that his work is but an attempt to attain the object he has set before him, and we may at once say that *as an attempt* and *as an outline* his book seems to us to attain a high level. Specialists in one or other department can doubtless do much in the way of minute correction and supplementing, but we must remember that a general view of each was all that was aimed at. The five larger maps, representing the physical features, geological character, comparative elevation, river basins, roads and railways of the Alps, are clear, though some of them are on rather a small scale. The fifteen diagrams and small maps in the text are, as a rule, very well done, being obviously taken from the Government maps; but of the ninety-five woodcuts, large and small, scattered up and down the book, most are mere caricatures of the scenes they profess to reproduce, and all are far below the level of excellence which in similar works we may fairly expect. We must give a word of praise to the author for the very extensive bibliography which he appends to each chapter, and which is a most useful feature, though it is certainly not exhaustive. The Alpine Club may well feel flattered at finding its 'Journal' so often quoted, despite the fact that reference to it seems to be based on no very consistent or uniform scheme. A very complete index enables easy reference to be made to any part of the book, the main features of the eighteen chapters of which we must now proceed to point out.

After a brief general view of the Alps and a comparison with the other mountain chains of the world, Prof. Umlauf proceeds to describe and criticise the various schemes proposed for determining the limits of the Alps, and the groups into which the Alps may be divided for topographical purposes. This summary is exceedingly handy and valuable, as anyone can see at a glance the various schemes set out in tables, Mr. Ball's proposals (as set forth in the 'Alpine Guide') being given a high place in each case. Prof. Umlauf, however, prefers on the whole Neumann's (1882) suggestion for fixing the limits of the Alps, by which the Col dei Giovi (between Genoa and Novi) is taken as the boundary between the Alps and Apennines, while to the E. a line drawn from Wiener Neustadt through Gratz, Marburg, and Laibach to the Isonzo and Hadriatic marks off the Alps from the hilly country. He does not, however, consider that any final agreement has been reached as to the different groups into which the Alps may be divided, save the three great masses of the Western (up to the Great St. Bernard), Central (up to the Brenner), and Eastern Alps, and also a threefold division into northern, central, and southern zones. In points of detail he prefers Von Sonklar's system (1876). Two chapters on the building up of the Alps and their main geological characteristics lead on to the great 'topographical description,' which fills no less than 220 pages (*not* 320, as misprinted in the preface). We are not inclined to dispute the claim put forth that this is the most elaborate monograph as yet written on the topography of the whole Alpine chain, though we adhere to the opinion, expressed several times in these pages, that, without a very detailed map, such a description loses much of its value. Now, Prof. Umlauf does *not* give us such a map, and hence his

description at times becomes something very like a dry catalogue of peaks and passes. On the whole it seems to us that, as far as we have examined it, this description is remarkably well done and very fairly accurate. There are many slips in the lesser known parts of the Western Alps (30 pages), though not all the gross errors of former writers are reproduced; but the writer is clearly far more at home in the Central (120 pages) and particularly the Eastern Alps (70 pages). It is the natural consequence of his three-zone division, but all the same it strikes one as a little odd that the Bernese Alps (being a division of the N. zone of the Central Alps) come immediately after the Oetzthal group (another division of the central zone of the same mass).

Later chapters deal with Alpine valleys, Alpine rivers, torrents, and lakes, the effects of erosion and weathering (*e.g.* mountain falls, earth pillars, rock holes due to the action of stones whirled round by water, as in the 'Gletschergarten' at Lucerne), and the Alpine climate.

From this point, however, Professor Umlauf seems to have been obliged to curtail his original scheme as given in his prospectus, for twenty-three pages are barely sufficient even to indicate every variety of snow and glacier phenomena (including the sad spelling of 'névée,' which makes one doubt the writer's practical acquaintance with the subject), nor can Alpine botany and zoology be satisfactorily packed into ten pages. Railways and roads are dismissed in eight pages, while the great subject of 'Man in the Alps' (inhabitants, carvers, hunters, herdsmen, customs, art, mineral springs) fills only twelve pages, the special variety 'Tourist and Climber' being described in six. All these chapters are quite inadequate to discuss such extensive subjects, but we imagine the reason of their brevity is to be found in the unexpected dimensions to which the 'Topographical Description' extended. The fascinating subject of the history of the Alps is barely glanced at, and we must point out to Professor Umlauf that, as far as we are aware, there is no statutory maximum (whether 500 or any other number) to the possible members of the 'Alpine Club,' which heads the list of the twenty-one Alpine Societies enumerated. The order in which different classes of devotees of natural science have explored the higher Alps is quaint and perhaps worth noting. First come the botanists, then the entomologists and the geologists, and finally the orographers.

No doubt this is the best general book yet written on the Alps *as a whole*, and it ought to be in every Alpine library, were it only as a convenient guide to all wishing to investigate more minutely any special aspect of the Alps. It is best and most complete in all matters connected with natural science and with the Eastern Alps, but lacks the charming simplicity and vividness of Berlepsch's fascinating work on Swiss mountains and Swiss men.

Alpenwanderungen: Fahrten auf hohe u. höchste Alpenispitzen. Von A. W. Grube. 3te Auflage, neu bearbeitet u. ergänzt von C. Benda. (Leipzig: Ed. Kummer, 1886. 12s.)

We confess at once that we had never before come across Herr Grube's book, which is now published in a revised and very much

enlarged edition. It does not pretend to be a critical history of first ascents, but is simply a collection of narratives referring to many of the great peaks of the Alps. A short account of the conquest of each is given, and then one or more full narratives of the ascent, whether by the earlier or later climbers. So for Mont Blanc we have De Saussure's and Pitschner's descriptions of their respective ascents; for Monte Rosa, Ulrich and Zsigmondy are the chief sources; for the Finsteraarhorn (the genuineness of the 1812 ascent by Hugi's guides being maintained), Hugi and J. Meurer; for the Jungfrau, Agassiz and Dübi; for the Schreckhorn, von Fellenberg. The book is of course meant rather for the general Alpine public than the narrower circle of climbers, and this largely influences the choice of the papers reprinted. One feature which, as far as we are aware, is peculiar to this book is that it takes in not merely the Central but the Eastern Alps. Thus, besides the three great groups already mentioned, we have sections on the S. Gotthard, Rheinwald, Tödi, Bernina, and Silvretta districts in Switzerland; while in the third part, the Ortler, Oetzthal, Zillertal, Gross Glockner, Gross Venediger, Dolomites, Dachstein, and Julian Alps all find their places. This feature appears to us the most useful in the book, for a man who knows well the classical narration of the conquest of the great peaks of the Central Alps will be glad to have in a convenient form other less-known accounts of the Alps farther to the East. It is to be regretted that no question is made of the Alps south of Mont Blanc, which constitute an extensive and important part of the Alpine chain.

The book is made for the German market, and, save Mr. Whympers' accounts of his attempts and final conquest of the Matterhorn, papers by Englishmen are not included, though of course English names appear very frequently. It is well got up and printed, and has stamped on the cover a glorious rock pinnacle glittering with silver snow. Of the illustrations in the body of the work, the less said the better; they are the very poorest we have seen for a long time and quite unworthy of the rest of the book.

Le Fond du Sac d'un Vieux Touriste : Rapsodies Alpestres. 1^{re} série. Par Louis Vignet. (Bourg en Bresse : J. M. Villefranche, 1886.)

French books on Alpine subjects all but invariably differ from English and German works of a similar character. The Englishman makes for the highest peaks and the best inns, while he describes his journeyings in a mixture of slang and bad jokes. The German explores a small corner of a minor district, and writes a monograph on it which is very full, very accurate—and all but unreadable. A French writer avoids all these snares, and is consequently accused of being superficial and unenterprising. Whether this be true or not it is certain that he is always amusing, which his rivals are not, or at least not exactly in the way in which they would wish. Now M. Vignet's latest work is as French as French can be. It describes the 'Tour du Mont-Blanc' in 1841, visits to the Bernese Oberland in 1844 and 1872, to the Valais in 1872, and to the Maurienne and Tarentaise in 1878. No great adventures are described, and perhaps

no permanent addition to our knowledge is made; but the book is written with a light, occasionally witty pen, and the rambles in sub-Alpine districts are very pleasantly described. Above all it is most readable and an admirable specimen of lighter Alpine literature, though of course it does not pretend to come up to the immortal 'Tartarin sur les Alpes,' perhaps the one really witty book written on the Alps. It is not given to everyone to scale lofty peaks or to be a member of the Alpine Club; and with true modesty we have no hesitation in saying that to the vast majority of visitors to the Alps M. Vignet's sketches will be far more interesting, and even useful, than most of the articles which have appeared in our pages. If anyone disagrees with this opinion let him comfort himself with the thought that, even if he does not form part of 'ce cénacle fermé de sportsmen anglais' vulgarly known as the Alpine Club, he is not necessarily one of the common herd, though possibly he too may for a moment unbend and apply himself to the perusal of the rhapsodies of the 'vieux touriste' who, we hope, will some day give us more of the contents of his heavily-laden knapsack. 'Alpinistes' may not always be 'mountaineers' in the strict sense; but each may study the other, and each may very likely profit by such study.

Miscellaneous.

Signor F. Virgilio (formerly editor of the 'C.A.I. Bollettino') has published in pamphlet form an interesting paper which he read before the Royal Academy of Sciences of Turin on January 24, 1886.* He has set himself to prove the existence, in the glacial period, of a great lake in the stretch of the valley between Cogne and Lilla, now known as the Piano della Selvanera. This would have arisen from the damming up of the waters from the upper part of the valley by the great glacier in the Valnontey, of which the immense Tribulation glacier is but one fragment, and the case seems, as Signor Virgilio points out, to be parallel to that of the Lac de Combal in the Allée Blanche. The author appears to us to have made out his main points, but several minor considerations (*e.g.* whether the upper or lower part of the lake first disappeared) may be left to professed geologists. To the non-specialist, the most taking part of the paper is the description of the Cogne valley, with all its great glaciers at the time of the glacial period, which is a good instance of the use of imagination in scientific matters. An excellent map of the district, with two smaller diagrams inset, greatly help the understanding of Signor Virgilio's latest essay in a field where Gastaldi and Baretta have wrought so well.

The Isère section of the French Alpine Club has lately issued the fourth and last of the albums of photographs which, some years ago, it undertook to publish.† It is devoted to a district which is probably quite unknown to foreigners, even to those who have visited the ranges

* *Di un antico lago glaciale presso Cogne in Valle d'Aosta, del dott. F. Virgilio.* (Turin: Loescher, 1886.)

† *Albums de la section de l'Isère du Club Alpin Français—Taillefer, Trièves, Dévoluy, Vercors.* (25 francs.)

of the Pelvoux and Meije. This is, roughly speaking, the country between Bourg d'Oisans, the old Roman town of Die in the department of the Drôme, and Grenoble. The limestone gorges of the Vercors are reported to be very remarkable, and are the subject of many of these photographs. Then, too, we have several views of that remarkable natural phenomenon, the Mont Aiguille, the first ascent of which was made as long ago as 1492 by order of Charles VIII.; but the panorama from the summit is decidedly disappointing. The Dévoluy, just south of the notorious pilgrimage place, La Salette, is said to be the stoniest part of Dauphiné, but the pictures of it in this book make us hope that this very evil reputation is not thoroughly deserved. The last few of the fifty photographs in this album represent various scenes on the Taillefer, S.W. of Bourg d'Oisans, one of the Lac Fourchu, with a distant view of the Grandes Rousses and Aiguilles d'Arves being very striking. Altogether, though this volume is not, perhaps, so interesting as some of its predecessors to the ambitious climber who requires his peak to be of a certain height, the photographs are as good as usual, and it may serve to bring to the notice of many a very curious and unfrequented district. Its publication is a fresh proof of the activity of the Dauphiné mountain-lovers, who have done so much to open up and make known their splendid Alpine inheritance.

We fear that even Herr Meurer's great powers have been overtaxed by his last undertaking.* This is no less than a map of the entire Eastern Alps from Chur to Lienz, from the Bavarian frontier to the Lago di Garda, on which are marked in red figures the number of hours required to go over each pass or up each peak, a red line indicating the general direction which must be followed. It is a work which must have cost infinite pains and trouble, and the printing is far more distinct than might have been expected. Herr Meurer's idea is, no doubt, that such a map will help travellers to decide at once on the ascents or passes they wish to make without the trouble of turning up the guide-book in each case. But the scheme seems to us to labour under two great disadvantages—the want of a fixed standard, by means of which a man can ascertain how long he himself will take, or how much he must add to or take from the times given (a drawback in all cases when it is attempted to accurately forecast the length of an expedition in which weather and legs play an even greater part than distance), and the real uselessness of the plan; for all who travel with their eyes open *must* ultimately consult the guide-book. Possibly, however, there may be persons who will find this map convenient, despite these drawbacks. At any rate, it is very handy as a general map of the whole of the Eastern Alps, and Herr Meurer's table of the 100 peaks in those parts of which the height exceeds 3,400 mètres (= 11,155 feet) is very interesting. Herr Meurer has, by his writings, done so much to make known the Austrian and Italian Tirol that we

* *Distanz- u. Reise-Karte von Tirol, Vorarlberg, Pinzgau u. den Dolomiten, mit Zugrundelegung von A. Steinhäuser's Karte, bearbeitet von Julius Meurer.* (Vienna: Artaria & Co.)

hope next time we meet him it will be in the discharge of a less ungrateful task than his present one.

It is scarcely necessary to do more than announce the publication of the fifth edition of Berlepsch's classical work on Swiss mountains and Swiss men.* No doubt many of our readers owe their first acquaintance with Swiss matters to the simply written but stirring pages written by an exile who had devoted himself heart and soul to his adopted country. The author himself died in 1883, and the present edition is brought out by his son, who has carefully revised it and inserted much new matter, as since the publication of the fourth edition in 1871 a great deal has been written on the country and considerable changes have taken place, the book being now composed of 566 pages. But we are glad to see that the dear old illustrations still hold their ground, notably the 'Wildheuer,' the goat-boy, and the hill chapel. We know of no book which gives a better idea of Swiss rural manners and customs; and the more we study them for ourselves, the more are we convinced that Berlepach has been singularly successful in reproducing them for the benefit of stay-at-home people.

Zur Namens- und Landeskunde der Deutschen Alpen. Von Dr. Ludwig Steub. (Nördlingen: C. H. Beck, 1885.)

In this little volume of 170 pages Herr Steub has collected some of his reviews and notes (written between 1875 and 1885) on the subject of local names in the Alps, more especially in the Tyrol in its original and limited geographical sense.

The most generally interesting article to our readers will doubtless be the one which stands first. It is entitled 'The History of German Alpine Villages,' and is a review of two books of Professor von Inama-Sternegg, of Innsbruck. In the course of it Dr. Steub expounds his view of the ethnological history of the Tyrol, and we may say at once that though it makes that history a very intricate and complicated one, this theory seems to us to answer far better than any other to the actual facts of history. Put briefly, it is that in the Tyrol there are three ethnological strata, arising from three migrations or occupations—the Rhætian, the Roman or Ladin, and the German. The first of these people were the original occupants of the land and have left traces of their existence in many local names (*e.g.* in the Vinstgau and between Brixen and Botzen), though only in the main valleys, and here along the streams and not on the hills, for, as Dr. Steub points out, there is scarcely a peak from the Ortler to the Gross Venediger the name of which can be certainly shown to be of Rhætian origin. Later (during the first 500 years of the Christian era) came the Roman invasion, which has left far deeper traces than the Rhætian. These settlers penetrated into the remotest and most desolate valleys, the land in which they cleared and cultivated. Here their presence is still

* *Die Alpen in Natur- u. Lebensbildern dargestellt* von H. A. Berlepsch. Mit 18 Illustrationen. Fünfte, sehr vermehrte u. verbesserte Auflage, umgearbeitet, vermehrt u. ergänzt vom Sohne des Verfassers. (Jena: Costenoble, 1886.)

shown by numerous local names, as in the upper Inn valley from Landeck downwards, in the Vinstgau, and around the ice-clad peaks of the Oetzthal. It was at this time that the Ladin-speaking folk of the Grödnerthal and Enneberg first came into the Tyrol. Finally we have the German occupation, Swabian in the upper Inn valley, Bavarian in the lower. In this way the Ladin villages were largely Germanised, though the Germans simply succeeded to the already cultivated and cleared lands, not opening up any virgin soil except in the Oetzthal, where the local names point to a very early and thorough German occupation. A very long and desperate struggle between the Ladin and German elements took place, which is even now far from ended. But it is surprising to find that as late as 1234 a large part of the inhabitants of Innsbruck were Ladins, while Botzen resisted Teutonic influences even longer. Trent, on the other hand, absorbed the small Teutonic element there, so that it is now part of 'Italia Irredenta.' In the upper Inn valley too German names of fields were extremely rare before the sixteenth century. Thus the ethnological history of Tyrol is very varied, and it is unique, for it is here only (in the case of the lands usually classed as Germany) that the German settlers found previous non-German occupants, and that we can trace out the ebb and flow of the linguistic tide. Hence it is that both Ladin-speaking and German-speaking Tyrol contains a population of mixed and not of homogeneous origin. It was in the Southern Tyrol that German influence was slightest, and where the Bavarians coming from the N. and the Lombards coming from the S. were absorbed most completely into the Ladin-speaking folk, the Grödnerthal and Enneberg representing advanced posts in the enemy's country. On the other hand in North Tyrol the Germans, always reinforced by fresh emigrants, carried all before them save in the case of local names, which remain to attest the presence of former non-German-speaking settlers, while the German advanced posts are the valleys described in Herr Leck's book, to be noticed in our next number, as well as the Val Sugana and the Sette and Tredici Comuni, near Vicenza and Verona respectively. In either case these isolated foreign villages represent unsuccessful attempts at occupation or colonisation. For this reason a map of Tyrolese dialects is repeatedly demanded by Dr. Steub, who points out that each valley differs in dialect, manners, customs, &c., and that it is only on the basis of countless monographs that the final and definitive linguistic history of the Tyrol can be written.

The history of the Pusterthal is peculiar, for there the German settlers were opposed by Slavonic settlers coming from the E.; and though Rhetian and Ladin names are found there (and the side valleys, such as Sexten, were long Ladin), yet in the W. part the Bavarians were very strong and the Slaves only succeeded in maintaining the ground already won. Dr. Steub's practical conclusion against Prof. v. Inama-Sternegg is that the Alpine villages are *not*, as a rule, of German origin, but originally settlements of Rhetians and Ladins, keeping in many cases their old names, but now Teutonised and forming a special chapter of the general Teutonising process in Tyrol; while, again, the theory that cultivation began on the hill-sides,

and only gradually came down to the swampy flats by the stream in the valley, is combated by Dr. Steub for the apparently good reason that the enormous number of Rhaetian names of villages by the banks of the Inn, and Adige, and Eisack prove without a doubt that the first settlers lived in the valleys and not on the hill-sides above. But these results are less important to us than the general sketch of the linguistic history of the Tyrol which, after Dr. Steub, we have tried to give above. Dr. Steub is very strong on the necessity of getting at the earliest possible form of local names, in order to settle their meaning, as the only sure basis for such a task. Here he is certainly in the right, and if such a course had been adopted we might have been spared many a wild etymology. He instances Trafoi, which cannot come from 'Tre Fonti,' which would form 'Tresfunz,' but from 'trifoglio,' or clover, 'trafoi' being the name for clover in the Grödnerthal and Enneberg.

There is a curious account of the little hamlet of Schlinig, near Mals, in the Vinstgau (now consisting of twenty-one houses only), in a very remote position, where in the sixteenth century the inn-keeper was annually *elected* by the people, without the power of declining the honour, and a certain money advance was made to him to enable him to lay in at once a stock of wine, for this he was compelled to do within a fortnight after his election under pain of heavy penalties. The four gulden advanced were handed over to his successor at the end of the year. This is compulsory 'local option' with a vengeance.

PROCEEDINGS OF THE ALPINE CLUB.

A GENERAL Meeting of the Club was held in the Club Rooms on the evening of Tuesday, February 1, 1887, C. T. DENT, Esq. (President), in the chair.

Messrs. R. N. ARKLE, C. C. BRANCH, J. VIRIAMU JONES, C. W. MEAD, G. H. MORSE, W. MUIR, E. BURCHELL RODWAY, and Lieut. F. E. L. SWAN were balloted for and elected members of the Club.

The HON. SECRETARY presented the accounts for the year 1886.

Mr. WILLINK moved that the maps belonging to the Club should be rearranged, as they had long been in disorder.

Mr. FRESHFIELD, who had arranged them himself eight years ago, seconded Mr. Willink's motion, and said the remedy was in the hands of the Committee. He called attention to the fact that the map room of the Royal Geographical Society (1 Savile Row) is free and open to the public every day from 10 till 5.

The CHAIRMAN promised to bring the subject of the maps before the Committee.

The accounts having been passed, Mr. GROVE brought forward the motion for the alteration of Rule XII., of which notice had been given, as follows:—In Rule XII., line 6, after the word 'approval' to leave out all words to the end of the sentence, and to insert the following: 'and after election the name of the new member, and the

statement of his qualification, shall be entered in a book which shall be kept in the Club Rooms, and be open to the inspection of members.' He would propose this as a kind of 'declaratory act,' in accordance with the principle that the decision as to the sufficiency of the mountaineering qualification of a candidate was in the hands of the Committee, and his social qualifications in those of the members of the Club; but that the members had a right to know on what lines the Committee worked.

Mr. KING, M.P., seconded the motion.

The CHAIRMAN, at the request of Dr. MARCET, read the whole Rule as it would stand if so altered, and explained that the result would be that the candidates' book would in future be always on the table as a 'New Members' Book.' He then put the motion, which was carried unanimously.

The CHAIRMAN announced that Signor Prina had presented one of his pictures to the Club.

A vote of thanks to Signor Prina having been passed by acclamation, the CHAIRMAN brought forward a matter of considerable importance—namely, the preparation of a complete index to the 'Alpine Journal'—and he read to the meeting the paragraph which would appear in the February number (see p. 175). All he would now ask for was the general approval of the scheme by the meeting. He was glad to say that all the volumes had been already taken in hand by members of the Club.

Mr. FRESHFIELD suggested the re-editing of Ball's Guide as a subject worthy of attention.

Sir FRANCIS ADAMS made the following statement to the meeting of the expenditure of the fund subscribed for the families of Gertsch and Meyer, the guides concerned in the accident on the Schreckhorn:—

'After the fatal accident of August 28, 1886, on the Schreckhorn I agreed to the request of Mr. D. J. Abercromby, on behalf of himself and other members of the Alpine Club then at Grindelwald, to assist the pastor Strasser and Herr Fritz Boss in the distribution of the money subscribed, mostly by English, for the families of Gottlieb Meyer and Christian Gertsch. It was also intimated to me that the erection of a tombstone to Meyer's memory would give very general satisfaction. I gave the necessary order in Berne, and the stone, with an English inscription in indelible letters, together with two Scriptural verses in German, as desired by Meyer's mother, was sent to Grindelwald in December last. I went up there twice in that month, and found that, deducting the sums already paid to the families of Meyer and Gertsch, there remained about 2,000 francs for distribution. I suggested to the pastor and Herr F. Boss that this sum should be equally divided between the two families, and used for discharging mortgages on their property. On January 8 last Herr Boss wrote me a letter (which I received just as I was leaving Berne), in which he stated that the 2,000 francs had been given to the two families by the pastor, and were used to clear off mortgages. The pastor also wrote to me, expressing the thanks of the families to the subscribers and enclosing their receipts.'

‘ Herr Boss’s letter also contained the rough copy of the accounts, from which I have obtained the following result :—

Subscriptions for both families	Francs	3,807
Mr. Van Rensselaer, for Gertsch		500
Miss Wooly, for Gertsch		250
Gift of insurance office for Meyer		200
		<hr/>
Total		4,757
Amounts paid to both families on different occasions through Pastor Strasser, including the above three sums, making together 950 francs		2,450
Tombstone for Meyer, carriage, &c.		291
Sum divided between the two families		2,000
		<hr/>
Total		4,741

‘ There would thus appear to be a small balance of 16 francs. The tombstone has yet to be placed in the churchyard.’

Mr. GROVE then read the address, which he was prevented from delivering at the annual general meeting in December.

At the conclusion of the address the CHAIRMAN expressed a hope that some one would take exception to the view that the Alps are played out. At any rate he would ask for a warm vote of thanks to Mr. Grove for his very interesting address. This was accorded by acclamation, and Mr. Grove having briefly replied, the proceedings terminated.

A General Meeting of the Club was held in the Club Rooms on the evening of Tuesday, March 1, 1887, C. T. DENT, Esq. (President), in the chair.

The CHAIRMAN referred in most feeling terms to the great loss the Club had sustained in the death of Mr. A. W. Moore, which took place at Monte Carlo on February 2 last. He was one of the leaders of the Club and a typical mountaineer. Some of the most brilliant achievements in the Alps had fallen to his share, such as the first ascents of the Brèche de la Meije, the Pic des Ecrins, the Gabelhorn, as well as the first passages of the Jungfrauoch and the Moming Pass. The Committee hoped to have some permanent memorial on the walls of the Club Rooms of one the charm of whose friendship was esteemed no less highly than his great qualities as a mountaineer were admired.

Mr. FRESHFIELD and Mr. GROVE spoke of Mr. Moore from their own experience as a companion, colleague, and friend. Mr. WHYMPER endorsed all that had been said. He and Mr. Moore had been friends from 1861, and in 1864 had made a tour in Dauphiné together. After speaking of Mr. Moore’s thoroughness in everything he undertook, and his coolness in danger, he proposed that the meeting should authorise the Committee to offer the condolences of the Club to his family.

Professor BRYCE, M.P., seconded the proposition, and spoke of the very high esteem in which Mr. Moore had been held by his colleagues at the India Office.

The CHAIRMAN put Mr. Whympers’s motion, which had already been considered by the Committee, and it was unanimously agreed to.

The CHAIRMAN then mentioned that a collection of Alpine paintings

by Signor Micocci, of Rome, would be on view in the Club Rooms for a fortnight from the following day; and announced that Mr. C. E. Mathews had presented to the Club Mr. Adams Reilly's original sketch map of the Mont Blanc chain. A vote of thanks to Mr. Mathews having been accorded by acclamation, Mr. HOLZMANN (Vice-President) took the chair, and called upon Mr. DENT to read his paper on the 'First Ascent of Tetsuld Tau.' The paper was illustrated by a map of the district, and by a large panoramic sketch of the chain from Tetsuld to Koschtan Tau; and at the conclusion remarks were made by Mr. GROVE and Mr. FRESHFIELD, chiefly with reference to Koschtan Tau. The latter contended that the highest point was not at the north end of the arête, but near the S.W. end, at the junction of the ridges. As regards Tetsuld, he considered the name belonged to the snow pyramid conspicuous from the southern valleys, and that Mr. Dent's peak, a quite distinct one, should be otherwise named.

Professor BRYCE, M.P., remarked on the interesting ethnological questions which presented themselves, and Mr. DONKIN described a luminous avalanche which he and Mr. Dent had seen while returning to their camp in the night.

Mr. DENT having briefly replied to the various questions raised, a vote of thanks was accorded to him by acclamation for his most interesting paper, and the proceedings terminated.

A General Meeting of the Club was held in the Club Rooms on the evening of Tuesday, April 5, 1887, Mr. C. T. DENT (President) in the chair.

Dr. WILLIAM CATLEY was balloted for and elected a member of the Club.

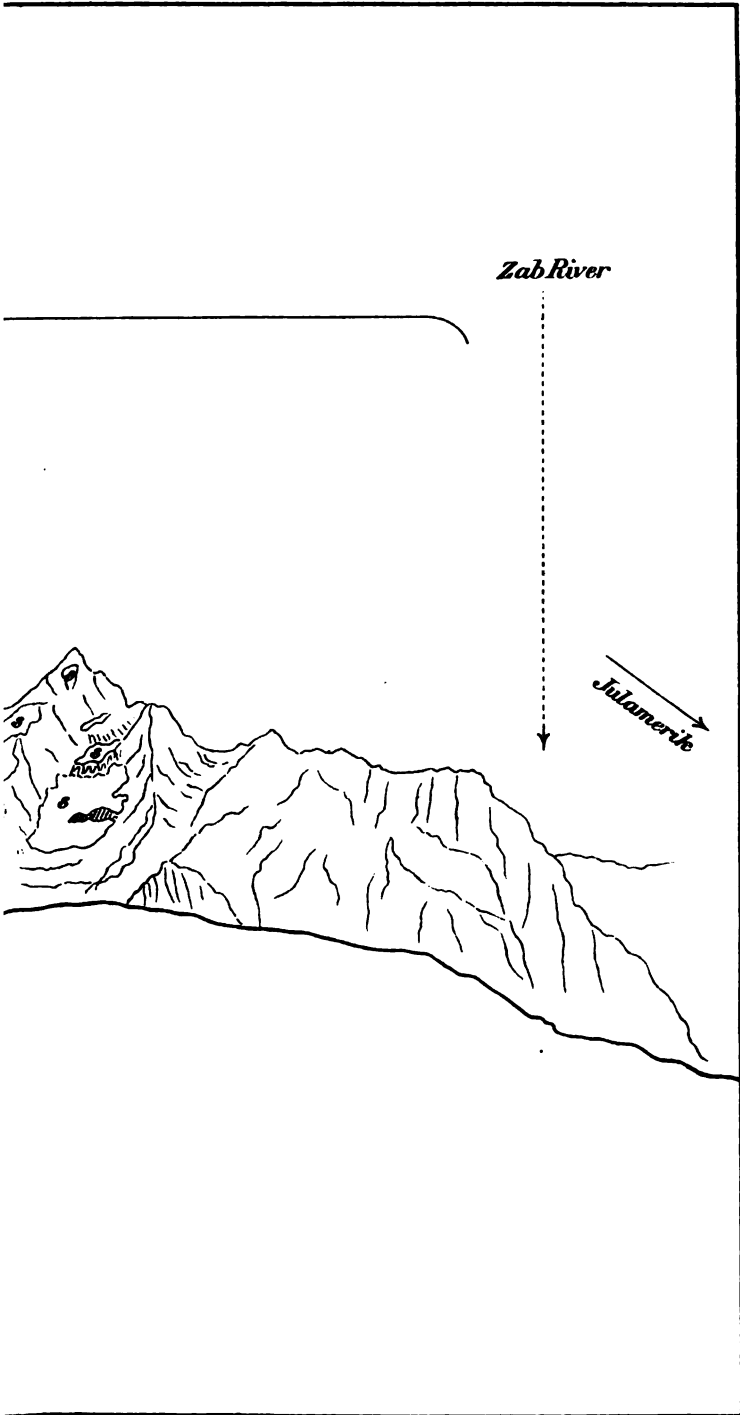
The HON. SECRETARY read a letter which he had received from Mrs. Moore, thanking the members of the Club for the expression of their condolence with her in the death of her son. He also read a letter received that day from Mr. Cecil Slingsby, hoping that members would avail themselves of the opportunity afforded by the snow still lying in the Lake District for some interesting climbing.

The CHAIRMAN called attention to the forthcoming Liverpool Exhibition, in which it was contemplated by the promoters to organise an Alpine Court, and to invite contributions illustrative of Alpine climbing.

Mr. B. WAINSWRIGHT then read his paper on 'An Ascent of the Monte Rosso di Scerscen from the Scerscen Glacier, and the passage of the arête connecting this peak with the Bernina,' at the conclusion of which Mr. GROVE remarked on the antipathy of the local guides to going with Englishmen, but for which he would doubtless have been able to make the first passage of the Güssfeldt-Sattel. Mr. SLEE, who had accompanied Mr. Wainwright, confirmed Mr. Grove's remarks. The CHAIRMAN spoke of the decadence of mountaineering in the Engadine. Mr. WAINSWRIGHT made some further remarks in reply, and a vote of thanks having been accorded to him by acclamation, the proceedings terminated.

Erratum.

Page 182, line 16 from top, for the first read the.



Zab River

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THE
ALPINE JOURNAL.

AUGUST 1887.

(No. 97.)

THE MOUNTAINS OF KURDISTAN.

By E. CLAYTON.

SPEAKING very generally, the great Armenian plateau may be said to be upheld on the north by the Caucasus, and on the south by a parallel chain, the southern slopes of which look out over the plains of Mesopotamia. The portion of this chain which lies between the point of junction of the two upper branches of the Euphrates, the Murad Su and Kara Su, near Keban Maaden and the Lake of Urumiah, has no distinctive name that is generally accepted, but may, I think, very well be called the central Kurdistan range; and it is with regard to this range, and the portion of the Armenian plateau in the neighbourhood of the Lake of Van, that I am encouraged by the Editor to throw together a few notes, founded upon my experience when vice-consul at Van from the spring of 1879 to the autumn of 1881.

The position of the beautiful Lake of Van is a remarkable one. Abruptly from its southern shores rises the central Kurdistan range, with its rugged roots dipping deep and sheer down beneath the blue waters, while west, north, and east plains and low ridges are broken by huge craters, volcanic cones, and outbursts of igneous rock. The greatest length of the lake from north-east to south-west is about 80 miles, while its greatest breadth is about 40. Very lovely indeed was the first view I gained of it when on my way to Van in 1879. On attaining the edge of the low plateau separating the lake from the plain of Mush it lay before me, its bright blue waters sparkling in the sunlight, the rugged slopes of the southern shore clothed with dwarf oak and cedar close at hand on the right, the peaks of Warak, that overlook Van, just appearing in the far distance, while

across the western bay of the lake to the left rose the snow-capped cone of the Sipan Dagh. Farther still to the left, and rather behind, lay the Nimroud Dagh, an extinct volcano, enclosing within it a vast circular crater some four or five miles across, but not showing its full proportions from this point of view, the best view of it being gained from the lake. I had an opportunity of visiting this great crater in June 1881, having come across the lake from Van for the purpose of bringing some relief to a village named Teghourt, situated on the flank of the mountain, which had been destroyed by an earthquake on May 30, with a loss of 93 lives. Leaving a village, Aghagh, on the shore of the lake, at 6.15 A.M. on horseback, accompanied by the Armenian head of the village, his brother, and my dragoman, we rode first over a gently rising plain of disintegrated lava, which forms a very fertile soil, growing excellent crops of wheat. Halting from 7 to 8.30 at a village for breakfast, we then began to breast the steeper slopes. About 10 A.M., on reaching some good grass, we halted to let the horses graze, and starting again at 10.45 continued to mount on foot, leading our horses, and reached the edge of the crater in about twenty minutes. An aneroid observation made this point 2,740 feet above the level of the lake, or 8,210 feet above the sea. The point we had reached is the lowest in the whole rim of the crater, and is at the eastern extremity of its east and west axis. The highest points, which lie at the ends of the north and south axis, are from 700 to 900 feet higher. We here stood on the edge of a gigantic circular hollow, the black precipitous walls of which, lined and seamed with the whitest snow, stood out in marked contrast with the broken dome of greenery and the blue tarns which filled the depression. A path used by the inhabitants of the villages at the base of the mountain for fetching wood from the crater soon led us down to the edge of one of the tarns, offering a most picturesque scene. Many-coloured rocks peeped through cushions of moss and grass; dwarf birch and a creeping yew clambered over the broken slopes; while above all frowned down those grim black walls with their silver belts. In and round this tarn bubbled up numerous hot springs, in which one could only just bear to keep one's hand. Six or seven other tarns lie among the hollows at the bottom of the crater, about 870 feet below the point at which we crossed the rim. Looking from such a point of vantage as the Nimroud Dagh it is clearly seen that the volcanic phenomena of this region had an origin subsequent

in time to the elevation of the central Kurdistan range. On the southern shore of the lake there is a crater the wall of which has been breached, allowing the water to enter and forming a singular land-locked harbour. Viewed from Nimroud it is perfectly easy to see the beds of ashes, &c., cast forth by this crater lying unconformably on the top of the rocks forming the outliers of the mountains, thus evidencing the more recent deposition of the volcanic débris.

While on Nimroud on this occasion a theory also presented itself to me to account for the formation of the Lake of Van. This lake has at present no outlet, and the waters are strongly impregnated by alkaline and saline matters, and the question is how to account for the existence of this deep enclosed basin. Now, an observer placed near the centre of the lake sees all round him ground elevated above the level of the waters, formed of aqueous metamorphic rocks as distinguished from volcanic ejecta. Therefore ever since the surface of the land attained its present form the drainage must have been into the basin where the present lake lies. At one point only does something like a gap appear. The Nimroud Dagh is connected with the central range by a narrow neck rising only about 450 feet above the level of the water. On one side of this neck lies the lake; on the other side lies a wide valley leading into that of the Euphrates near Mush. This valley lies 1,000 feet lower than the present level of the Lake of Van, and the neck of land between them appears, as far as my observations go, to be formed wholly of lava. The idea, therefore, presents itself that where the Lake of Van now exists there was once the confluence of the two principal rivers that now run into the lake, the Khoshab from the east and the Bende Mahi from the north-east, and that the united streams poured through the gap between the Nimroud and the central range, and joined the Euphrates near Mush. Then came an outburst of lava from Nimroud, closing the gap, and the imprisoned waters accumulated and formed the existing lake.

The Sipan Dagh is an isolated volcanic cone of stately form which rises on the northern shore of the lake. Its height must be some 7,000 feet above the level of the water, or upwards of 12,000 feet above the sea, and perpetual snow rests on its summit. There appear to be still volcanic forces at work, connecting it with the Nimroud Dagh, as the earthquake that destroyed Teghourt caused damage in other villages in the line connecting the two mountains, but nowhere else. At one time, moreover, it is probable that this

group of volcanoes had an underground connection with Ararat, for north-east of the lake, near the source of the Bende Mahi, on the road from Van to Bayazid, rises another volcanic cone from which a great stream of black lava has been poured forth, and the four great vents are almost exactly in a straight line.

Besides these actual volcanoes there are many outbursts of igneous rocks, such as traps, porphyries, and basalts, breaking through the stratified rocks which form the greater part of the surface of the country. One of these outbursts has formed the bold mass of the Warak Dagh, which rises behind the city of Van. The city itself lies in an alluvial plain at the foot of a curious isolated rock of limestone, and the ground thence rises gently over swelling waves of thin-bedded, marly sandstones, until the fire-scathed rocks of Warak burst suddenly through. The Warak massif consists of two parallel ridges running nearly north and south, connected in the middle by a lower ridge, so as to form somewhat the shape of a letter H. At the mouth of each of the side gorges is situated an Armenian monastery, the most important of which—that to the southward—is called Yedi Kilissa, or the Seven Churches, the remains of seven churches actually existing still within its walls. It stands in a glorious situation, about 1,500 feet higher than the city, looking over the whole expanse of the lake framed between the central range and Sipan, with the great crater of Nimroud hanging its graceful curve across the gap. The notables of Van are accustomed to use the monastery in summer as a health resort, its bracing air being a welcome change from the stuffy city below. The highest ridge of Warak is about 10,000 feet above the sea and is perfectly easy of access, though once going up in winter from Yedi Kilissa, with my gun slung at my back, in search of wild sheep, I was glad to have an ice axe with me to cut steps in the hard snow of a steep gully.

But by far the most important orographical feature of this country is what I have called the central Kurdistan range. This range is a most intricate network of ridge and valley, the ridges being generally very uniform in level, with few marked peaks. The chain is chiefly composed of metamorphic rocks, such as mica-schists and crystalline limestones, but there occur in various places great outbursts of basalt and porphyry. The lower slopes and valleys are usually clothed with forest, consisting principally of deciduous trees, such as dwarf oaks, birch and walnut, with a few

cedars and other conifers. In some parts, especially towards the western end of the range, the ridges, composed of comparatively soft strata, are rounded and waterworn with scree-like slopes, and the upper parts covered with herbage; but the eastern end of the chain, where crystalline rocks are more prevalent, is much bolder in outline; the ridges and peaks are rocky and precipitous, the gorges deep and rugged, and the scenery reminds one very strongly of the sub-Alpine regions of Switzerland and Tyrol. In the early summer of 1880 I proceeded from Van to Sert by a direct route through the mountains that, as far as I know, had not previously been traversed by any European traveller. The greater part of the route led through the very narrow gorge of a river which rises close to the Lake of Van and falls into the Bohtan Su, which is an affluent of the Tigris. The scenery was most picturesque: a rocky ravine, with slopes more or less clothed with trees; small villages built of rough red stones wherever a shelf gave a little level ground; clear waters foaming at the bottom, and occasional glimpses up side gorges of loftier mountains, at this time (June) heavily streaked with snow. At one point we diverged from the river, the gorge of which became impassable, and after proceeding up a side ravine into a plain containing the little town of Karasu, the chief place of this region, crossed a low ridge of sand and looked over into a basin like an English park set down in Tyrol. The floor of the basin was undulating grass studded with clumps of trees; lanes ran between hedges bright with flowers, among which gleamed conspicuous the bright yellow cups of the Persian rose. Beyond this valley sprang, rough and rugged, a chain of dark mountains, whose rocky summits nursed many a bed of glistening snow. In this valley stood the Tekié, or abode of a noted holy man, Sheikh Jelaleddeen, where he dispensed law and hospitality to the neighbouring tribes of Kurds. I did not succeed in obtaining an interview with him, but was much surprised at seeing at the back of the house in this wild country a large pile of red draining-tiles. In no other part of the country have I ever come across any such evidence of advance in modes of culture, the prevailing methods being apparently exactly the same as they were in the times of the Hebrew prophets. But it is very curious how bits of Europe are found in the East in most unexpected places. On another occasion I went to visit the great Sheikh Obeidullah, and on being ushered into his room to return his call the first thing that caught my eye was an iron

French bedstead, the whole of the rest of his house being furnished entirely in native Persian fashion.

This journey to Sert led me through a country apparently abounding in game, for the same day on which we passed Sheikh Jelaleddeen's Tekié a herd of deer crossed our path in one place, my men saw two bears, and when we pitched our camp at night we saw glittering on all sides the fires where the peasants were watching to keep the wild pigs from their scanty patches of cultivation.

But the culminating portion of the range, where alone the peaks attain anything like real Alpine proportions, is in the district of Jelu, south-east of Van, in the country where dwell the Nestorian Christians, surrounded on all sides by some of the wildest of the Kurdish tribes. This district is still nominally under Turkish rule, but it is very weak there. The Tiyari branch of the Nestorians have for some time kept the Turkish troops and tax-gatherers out of their barely accessible valleys, and Sheikh Obeidullah only so far acknowledged submission to the Sultan as to permit a Turkish mudir to live in his village; but the whole taxation of the district for many miles round Neri, his village, was swept into his coffers, not that paid by the Kurds alone but also that paid by the Nestorians who were within his reach. His revenue was estimated at 7,000*l.* a year, and certainly enabled him in 1880 to invade Persia at the head of 20,000 men. The Turkish Government, however, succeeded in getting hold of him in 1881, and sent him into exile, where he was afterwards reported to have died, and I do not know if anyone else has succeeded to his authority.

The mountains of Jelu are a very high, rugged group, the peaks of which are distinct and characteristic in form. Kiepert gives the highest an elevation of 15,000 feet, but I should consider that much too high an estimate. My own estimate would put it at between 13,000 and 14,000 feet. Very little snow lies on these mountains all the summer, but this is principally due to the fact that the climate is extremely dry. No great amount of snow falls even in winter, and none at all for months in the summer, when not a cloud obscures the sun's rays, so that the winter covering is not sufficient to withstand the melting and evaporation of the summer. My duties did not allow me to spare time to attempt any ascents in these mountains, but from their appearance some of them would, I think, afford some good rock scrambling. I was never near enough to them to be able to ascertain what rocks they are composed of, but the

forms of some of them reminded me a little of some of the Tyrolese Dolomites. The sketch I made was taken from the opposite side of the gorge of the Zab River, near Kochannes, the village where resides Mar Shimoun, the Patriarch of the Nestorians. My point of view cannot have been much less than 8,000 feet above the sea, but I had not my aneroid with me that day, so I cannot tell exactly the height. The level of the Zab River is at this part of its course but little over 4,000 feet, so it may be imagined how effectively the mountains lift themselves from their bases into that clear atmosphere which makes everything look so deceptively near. The valley of the Zab immediately below this point forms the district of Tiyari, inhabited by a part of the Nestorian people. The passes into and the paths in this district are so exceedingly difficult and bad that the people have for some time defied the Turkish troops and tax-gatherers, and having recently repudiated the authority of Mar Shimoun, their own Patriarch, on account of the weakness of his character and his supposed betrayal of their interests, are living in a condition of practical independence.

I was unable to discover among the mountains of Kurdistan any *unmistakable* evidence of ancient glacier action, but I noticed at the mouth of some ravines mounds which might have been moraine matter and rocks which might have been smoothed by ice; and near the summit of a peak overhanging the village of Atanan, in the south-eastern bay of Lake Van, a kind of cirque of rocks is seen, the floor of which has a very strong resemblance to *roches moutonnées*.

When looked at from the point of view of a field for mountaineering, it must be confessed that the extent of mountainous country offering even any probability of interesting ascents is so small that an expedition to explore it alone would not have a sufficient object; but the whole country is of much interest both historically and in its present condition, and there is plenty both in the country itself and in the manners and customs of the people to repay the traveller. It is very curious to notice the sort of contrariety or upside-downness there is in the East. All locks are put on as we should consider wrong side upwards; shoes are taken off when going into a house instead of the hat, so that when visiting Armenian schools I have often been amused on entering the vestibule at seeing, instead of rows of hats on the walls, rows of shoes on the floor; and whereas a European, when he has a bit of work to do or a walk to take in hot weather, disburdens himself of

his coat, an Armenian or Turk under the same circumstances takes off his trousers! The sporting capabilities of the country too are good enough, though I do not wish to encourage exaggerated ideas of the sport to be obtained. I was never able to devote time to the object of sport alone, and I therefore do not know exactly how much might be expected, but in my journeys I have found very generally game of some kind. Partridges, both of the ordinary kind and red-legged, are found almost everywhere; I have shot duck both on the shores of Lake Van and on the Zab River; snipes and hares are found in some places, and round the lake I have seen abundance of more unusual birds, such as geese, pelicans, and flamingoes, though I am obliged to confess that all my attempts to get near them were fruitless. Of larger game there are wild sheep and goats on the mountains, besides deer; bears are not uncommon, and wolves abound in winter, coming in troops even into the streets of Van itself. And as a *rara avis* there is the great Our Keklik, or gigantic partridge, which is described as being as big as a turkey and is only to be found where it is within reach of snow all the year round. I regret to say I never saw one, though Sir Henry Layard especially recommended it to my notice, and I tried my best to obtain a specimen. I was told of more than one being in captivity, and was promised one, but somehow they always died or escaped just before I could get within reach of them. So far as I am concerned they have not got beyond the mythic stage, but it would be a great triumph to bring one home, and I beg to recommend it as an object.

Van would be the best base of operations, and it may be reached either by way of Trebizond and Erzeroum or through Tiflis and Erivan. In either case the latter part of the journey must be made on horseback. A party would have one great advantage, that of being certain of perfect weather. The climate too is excellent. Hot it certainly is, but not oppressive, and at night in the mountains it often freezes in July. Care must therefore be taken to avoid chills and not to camp in swamps; but that is all. It would take me beyond the limits of this paper to go into details about the requirements for an expedition to this region, but if any members of the Club should meditate making one and would communicate with me, I should be only too glad to give them any information in my power.

THE MONTE DI SCERSCEN FROM THE SCERSCEN GLACIER.

By B. WAINEWRIGHT.

(Read before the Alpine Club, April 5, 1887.)

FOR the last fifteen years or more—in fact, ever since I began to climb—I have usually spent part at least of my summer holiday in the Engadine. I am aware that the ‘happy valley’ is not much in favour with members of this Club; nor is this altogether to be wondered at. First there is the long journey to get there, and then the difficulty of reaching any other climbing centre from thence; to which may be added the absurdly high tariffs and the scarcity of reliable local guides. Last, but by no means least, comes the uncongeniality of the life there in vogue to the hardy and perhaps somewhat ascetic mind of the orthodox mountaineer. It is true that one hears vague rumours of some of our most shining lights, having so far fallen from grace as to carry *pâté de foie gras* and Christmas pudding up well-nigh inaccessible rocks, or to bask in the smiles of beauty after the toils and perils of Mont Blanc, their features glowing with triumph at the memory of the cannon’s roar which announced their victory, and perhaps also from the genial influence of the bottle or bottles of ‘Bouvier.’ However, putting these scandals aside, there is assuredly a strong feeling amongst us that lawn tennis, dances, evening dress, and theatrical performances are hardly what one either expects or wishes for in the solemn presence of the everlasting hills.

When I first knew the Engadine some, if not all, of these uncongenial elements were present; but I am sorry to say that each year adds to them. New *hôtels* arise; the roads are more and more thronged with *Einspänner*, omnibuses, and even private carriages; lawn-tennis rackets are at least as common as alpenstocks, and some of the most beautiful walks amongst the pines are disgraced by refreshment booths and skittle grounds. Still all these things are, I fear, the inevitable accompaniments of popularity in any Swiss district; and what I wish to maintain is that the mountains themselves, at least the more difficult of them, have escaped vulgarising as well as, or better perhaps, than those of Zermatt, whilst their surroundings are certainly no more incongruous than those of the Chamonix district or the Oberland. I think, then, that the mountains of this range have been most unfairly depreciated; being little climbed, they are

thought not worth climbing. This is far from being the case, however, as I believe anyone will admit who takes the trouble to go and try for himself. Disparaging as the reflections are that are constantly cast upon this much maligned group, it is curious to note how few of the harder expeditions have been repeated. The Crast' Agüzza, a first-rate rock-climb, is scarcely ever attacked. The Güssfeldt Sattel has, I believe, never been crossed by English mountaineers. The Bernina Scharte has not been traversed by any native-born member of this Club, nor has the ascent of Piz Roseg from the Sella pass been repeated, whilst the Monte di Scerscen, about which I have the honour of addressing you to-night, had, previously to our attack on it last summer, only been ascended by three persons—namely, Herr Güssfeldt, Professor Minnigerode, and Mr. Williams—who all took the same route from the Tschierva glacier. Hoping that these remarks may stimulate the curiosity of some members looking out for interesting and certainly not hackneyed climbing, I will now pass to a short description of the geography of the Scerscen and its surroundings.

The Monte di Scerscen, as many members of this Club are doubtless aware, lies to the south-west of Piz Bernina, of which peak it might almost be considered as a large spur, and is separated from the Piz Roseg on the west by the steep ice-wall which has received the name of the Güssfeldt Sattel. Starting from Piz Morteratsch, a magnificent semicircle of peaks embrace the Tschierva glacier, in the following order, from north to west: first Piz Morteratsch itself, next Piz Bernina, then Monte di Scerscen, and finally Piz Roseg. Between Piz Morteratsch and Piz Bernina lies the Fourcla Prievlusa, from which a snow arête stretches to the notch known as the Bernina Scharte. Passing from Piz Bernina towards the Monte di Scerscen there is first a rather narrow but nearly level snow arête which ends in a shoulder, to which I shall have to allude presently, then rather a steep dip leads to a snow Sattel, the same that Mr. Williams reached from the Tschierva glacier. From this point an exceedingly narrow and jagged ridge runs to the highest peak of the Monte di Scerscen. From the shoulder of Piz Bernina, which I mentioned a moment ago, and which marks the junction of the main Roseg-Zupo arête with the great northern spur on which is Piz Bernina, a snow arête descends on the east towards the Crast' Agüzza, running nearly parallel to the arête by which the Bernina is usually ascended, and reaches the upper névé of the Morteratsch glacier, just at the top of

the Crast' Agüzza Sattel, which connects the Morteratsch and Scerscen glaciers. I must crave your indulgence for this somewhat tedious description and now proceed to tell my story.

For some years past I have wished to try the Scerscen from the Italian side, as it was one of the few things that still remained unattempted in this district. I had examined a way which I thought was practicable, but would prove difficult. None of the guides of the place, however, seemed very eager to try it, as the route, from the Tschierva glacier, seems to have given them a decided dislike to the mountain, and most of them thought that the other side would prove still more formidable. But last year Messrs. C. C. Branch and E. T. Garwood and myself talked over the thing and decided to attempt it, and Branch made the suggestion that we should also cross the very long arête leading from it to the Bernina. We examined this arête with glasses from the slopes of the Fourcla di Surlei and thought we could probably manage all except one place, where a drop of a hundred feet or more, which looked quite sheer, promised to prove a serious if not an insuperable obstacle. We thought, however, that this might be got over by means of a long rope, or possibly by turning it on the opposite side. It was settled then that we should make the attempt; but unfortunately delay after delay occurred, and finally Branch was obliged to leave. Garwood still remained, and, as we had climbed Piz Roseg together as well as doing a good deal of scrambling without guides, we knew something of one another's powers. But when we tried to secure guides we found it far from an easy matter. Hans Grass was engaged, and every other guide whom we asked to go spoke gloomily about a wife and family, and ended by flatly refusing to have anything to do with the expedition, with the single exception of a youth of nineteen named Schnitzler, who was willing to go as porter. In this dilemma M. Lionel Dècle, who was staying at the Kulm at St. Moritz, came to our assistance and kindly offered me his guide, Johann von Bergen, of Meiringen. I at once gratefully accepted his offer, which seemed to come in the nick of time to smooth away our difficulties. But another disappointment awaited us. The next day I crossed the Capütschin pass to Sils with Dècle, and on the way down the Fex glacier Von Bergen bruised his leg. This bruise proved very unlucky, as instead of coming to Pontresina next morning, as he had engaged to do, to make a start for the

Scerscen, he failed to put in an appearance ; so that Garwood and I waited about all day for him, to the ill-concealed delight of the local guides.

At last, finding this style of thing unbearable, I set off for St. Moritz in an *Einspänner*. We had not got far from Pontresina before one of the wheels came off—a very common occurrence, but particularly annoying at this moment. I had to return to the Krone in no very amiable frame of mind, and there found a telegram from Dècle to say that Von Bergen's leg was too bad for him to come. All seemed over with our expedition ; but the name of an Oberlander had done its work, and Martin Schocher and Schnitzler offered to go with us. So the next morning Garwood and I, with Schocher and Schnitzler, left Pontresina at 3 A.M. and drove up the Roseg valley as far as the Restaurant. We then went up the Roseg glacier, made our way through the séracs, and crossing the Sella pass reached the Scerscen glacier. We next bore to the left until we reached a spot nearly under the Crast' Agüzza Sattel. Here we made a halt of about two hours, in the hope of being able to reconnoitre our peak. In this, however, we failed ; for, although the day was fine, our particular mountain remained provokingly in cloud all the time. So we gave it up, and turning to our right descended the glacier and then some rather steep rocks to the Scerscen Hütte. In coming down these said rocks, being oppressed by the weight of a heavy knapsack, and in anything but first-rate training, I disgraced myself, and indeed nearly broke my neck ; for taking hold of a firm-looking rock, and trusting to it without trying it first, I dislodged and very nearly followed it.

This clumsy performance of mine made a deep impression on Schocher ; for when we reached the hut Garwood overheard him talking to Schnitzler in a very lugubrious tone, and asked him if he thought we should fail. He answered, ' Well, the mountain is very difficult. I know nothing of your climbing, and as to Mr. Wainewright, he is not nearly so good as I expected.' This was not inspiring, and a careful survey of the rocks we were to attack next day through the telescope did not improve our opinion of them. The mist had now cleared off and the face of the Scerscen seemed an unbroken wall, steep, smooth, and forbidding.

Still I have been so often deceived by looking at rocks thus that I tried to cheer myself and the others by representing how little you can really tell about such places till you get there, and also by pointing out that that side of

the Roseg which I had actually crossed looked as bad or worse.

Nevertheless the evening passed gloomily. Heavy rain came on, and we retired into the hut. There was no water near, and the unfortunate Schnitzler was obliged to make an expedition of half an hour in the rain in order to get some from the glacier. The surroundings inside the hut were also depressing. There were few and dirty blankets, and on the wall hung a tablet to the memory of poor Marinelli, who had persuaded the Italian Alpine Club to build the hut, for the purpose of climbing the peaks of this range from the Italian side, and who perished, with Ferdinand Imseng, in their attempt on Monte Rosa from Macugnaga.

I certainly thought much of him during a sleepless night in this wretched hut, especially as I had seen him at Pontresina just before his accident in the best health and spirits.

With the morning came the necessity for exertion, and it was hailed with pleasure both by Garwood and myself; for I found that he also had been a prey to the gloomy thoughts suggested by the inscription on the tablet. We got up, and after the usual struggle with boots, which in my case was more severe than usual, and the stereotyped farce of attempting to breakfast, we left the hut, without any regret, at ten minutes past three, and by keeping to our right avoided the rocks, which would have been very nasty in the dark, and went straight up the glacier till we reached the foot of the Crast' Agüzza Sattel. After a short halt here we commenced the attack. Before us lay a broad ice-slope, ending on the left-hand side in a belt of rocks about one-third of the way up our peak, and extending on the right in the form of a broad but exceedingly steep slope of pure ice up to the snow *Sattel* which separates the arête of the Scerscen from the Bernina. We mounted the lower part of the ice-slope, which was rough, without difficulty, until we reached the level of the belt of rocks before mentioned. Here we encountered the bergschrund, and after an ineffectual attempt to cross it Schocher turned to the left and tried to climb the rocks. These proved steep and glazed with ice, and it was not until we had tried them at several points, and made a long and rather disagreeable traverse of the ice-slope below them, that we succeeded in reaching a broad terrace of rock above the schrund. (Time, 6.15 A.M.) We now saw that we had made a mistake, as by keeping to the right we might have easily turned the schrund and saved at least half an hour and much scrambling. Then turning our

eyes on our peak we at once realised with equal surprise and satisfaction that we had apparently succeeded, as far as reaching the top was concerned. This side of the Scerscen is a rock face broken into a series of rough and narrow ledges covered with loose stones. Our chief difficulty, in fact, here was the rottenness of the rock, which came away in large pieces and required a good deal of care. One incident occurred. Schocher was leading, I came next, then Garwood and Schnitzler last. We were on rather a steep place, and Garwood having found that two large stones were loose, informed Schnitzler of the fact. In spite of this warning he laid hold of them and promptly descended in their company, carrying Garwood after him. Fortunately Schocher and I were firmly placed and held him without much difficulty, though his posture was neither dignified nor agreeable—i.e. on his face upon the rock without any hold in particular. Meanwhile Schnitzler was groaning and crying below, and declared that he was killed (which seemed the more improbable from his saying so); at last he modified this statement and said that his foot was hurt. We tried to persuade him to come on and relieve Garwood from his unsatisfactory position, but this he declined to do in the most decided manner, and we soon found that he had taken off the rope and was trying to get up another way. In this endeavour he got stuck, and Schocher was obliged to go to the rescue and bring him up. After this all went well—Schnitzler making a good deal of fuss about his foot, but apparently walking without much inconvenience—and we reached the top at 9 A.M. (Time from hut, a little under six hours.)

There is not much top about the Scerscen. It is merely the highest part of a ridge, like the dorsal fin of a fish, and when you reach the crest you at once look almost perpendicularly down upon the Tschierva glacier. As soon as our heads appeared above the edge we heard distant jödels, which, as we afterwards found, came from old Christian Grass, who saw us from Piz Morteratsch. There was a bottle on the top with the cards of Güssfeldt and Minnigerode. We now took a moderate refreshment, but could not admire the view; for although the day was warm and the sun bright our peak was enveloped in a light mist, which prevented us seeing far. We could see our arête, however, and rejoiced in the fact that there was no wind (for it did not look the sort of arête on which one would feel comfortable in a storm). After an hour's halt we started again,

and now the tough work began. We found the ridge uniformly of the narrowest; there was often only just room to tread, and in these places we must have stood out well against the sky. At other times upright progression became impossible; and every now and then we were obliged to keep a little below the crest, with but scanty foot or hand hold, the looseness of the rock, which was as well marked as ever, greatly increasing the difficulty, as each stone had to be tested before trusting it, and we were continually sending down specimens to one or other glacier. This kind of work was varied from time to time by short stretches of snow or ice. After one nasty bit I asked Schocher if he thought it would be worse farther on? He answered, 'It cannot be worse.' After about three hours and a half of this we came to a place where we had to descend a smooth and nearly vertical rock with a crack in it, with exceedingly little hold of any kind; in fact, just like the Crast' Agüzza, but not so much of it, fortunately, as Schocher remarked. Down this we proceeded with the greatest caution, with our faces to the rock, and reached a cleft in the ridge. We now met with a part of the arête which was ice for about 30 feet, with a fine overhanging cornice. Schocher seemed inclined to cross the top of this cornice, and when Garwood suggested the danger of doing so, as it looked extremely fragile, he excitedly exclaimed something to this effect: 'Here on the mountains you must follow where I lead. I am master here.' Feeling that he was right we assented. But Schocher, having relieved his feelings by this declaration of independence, proceeded to adopt our view and cut steps across a very steep ice couloir below the cornice, which we had to cross with great care. This brought us to a little piece of the ridge composed of loose boulders piled carelessly upon one another, between which we could see the Tschierva glacier. We now again heard jödels, this time from the Scerscen glacier, far below us, and could make out a group of people, who turned out to be my brother and some friends with the guide Rauch. They had been watching us for an hour and a half with a glass, and had seen every movement distinctly. A high and smooth rock now seemed to bar our progress. Schocher scrambled up it and I followed as best I could, but had no sooner gained the top than Schocher called to me to stop, and after examining the place well declared it, with some strong language, to be impossible. We had, in fact, come to the break in the ridge, about which we had always had misgivings. Schocher and I had to return to the others, as

the drop was almost absolutely perpendicular and there was nothing to which one could attach the rope.

After a consultation we decided to attempt a traverse on the side of the Scerscen glacier. This proved one of the hardest parts of the climb and our progress was slow. The foot and hand hold was very slight, and the rocks, if possible, more crumbly than ever. We went with the utmost care; but nevertheless dislodged volley after volley of stones. We could not now see my brother's party, so jodelled after each discharge to assure them of our safety. The traverse took a long time, but at length it was over and we reached the snow Sattel, where our route joined that of Mr. Williams up the Bernina. (Time, 3 P.M.) We had thus spent five hours on the arête.

After resting a few minutes we again started and followed Mr. Williams's route as far as the shoulder of the Bernina, before described, which we reached at 3.30 P.M. Just before getting there we had to pass under a pinnacle of half melted snow, weighing about a ton or so. Schocher gave it a blow with his axe, and as it did not move we crossed below it. We just got over in time, as it fell the moment we were passed, and we certainly narrowly escaped being carried away. All that was new in the climb being now over, and as it was getting late, we agreed not to go on to the top of the Bernina, but to descend by the second snow arête to the top of the Crast' Agüzza Sattel, which we did and then went down through the Bernina ice-fall (rather a dangerous thing, by the way, in the afternoon), Schocher leading at a hand gallop, and crossed the Morteratsch glacier to the Boval hut and thence by the path to the Morteratsch restaurant, where we had a glass of wine with the guides, and then drove on to Pontresina, getting in at 9 P.M., the whole expedition taking about 18 hours.

I should like to mention that Mr. Graham, of Himalaya fame, repeated this excursion a few days later with Schocher and Gross, going on, however, to the top of the Bernina, and did it, I believe, in very much shorter time. He did not seem to consider it difficult, but he had two experienced guides (one of whom had found the way only a few days before) to himself. However in writing this account I have felt bound to give the impression produced on Garwood and myself. A first expedition is, I think, always more impressive than subsequent ones, as, when the route is known, many difficulties can be avoided and much time saved.

I wish before closing to bear testimony to the fine

climbing powers of Schocher. He is an admirable rock climber, and will make a first-rate guide when he divests himself of the idea that nothing more is wanted in a guide than in a chamois hunter.

So ended a very pleasant day; and I hope some other members may feel inclined to follow in our footsteps.

THE FIRST ASCENT OF THE HÜHNERSTOCK.

BY FREDERICK GARDINER.

WHEN my friend Mr. Coolidge, in writing to me from Dauphiné regarding our plans for a short autumn campaign in the Oberland last year (1886), proposed that we should include the ascent of a virgin peak of about 11,000 feet, I confess I wondered that any such peak should still remain in that well-worn district. As an indication to whet my curiosity, he mentioned that it is near the Pavillon Dollfuss, above the Unteraar glacier, and that it is the highest peak in the Oberland proper, east of the Gauli pass and the Wetterhörner. A short examination of the 'Alpine Journal' and of the map led me to the right conclusion, that the mountain he referred to must be the Hühnerstock.

On the 7th of July, 1886, Coolidge, with the brothers Christian and Rudolf Almer, had slept at the Dollfuss hut, intending to try this peak, but the weather was so bad next day that they could not even see the mountain, and they had to descend disconsolately to the Grimsel hospice. This piece of ill-luck was my opportunity, as otherwise I should not have had the chance of joining in what proved to be one of the most exciting and interesting ascents that I have ever made.

In 1867 or 1868 Herr G. Studer crossed a pass at the east foot of the peak, and between it and the Bächlistock, leading from the Unteraar glacier to the Gauli glacier, to which he gave the name of Hühnerthäligrat.* He casually mentioned

* *S. A. C. Jahrbuch*, 1868-9, pp. 651-8. Coolidge sends me the following note:—'Herr Studer refers to a mention of this pass by J. R. Wyss in his *Reise in das Berner Oberland*, vol. ii. p. 711 (1817—not in the French edition), who in his turn takes it from a description of the passage of the Gauli pass, close to the Ewigschneehorn, published in 1811 as a supplement to the *Berner Zeitung*. I luckily possess a copy of this latter article. It is an eight-page leaflet signed "R. St. von Z." (= R. Stettler of Zofingen), and is most interesting. It was published in 1811 by reason of the recent appearance of Herren

that he did not consider that any very great difficulty would be met with in the ascent of the Hühnerstock, in which he was very far out indeed in his calculations, for not only did we find the last 700 or 800 feet remarkably difficult to climb, but that it is as uncomfortable a heap of loose rocks and stones as we have met with in the course of our Alpine experience. So little did we expect to find any serious difficulty, that we did not think it requisite to leave the Pavillon Dollfuss until daybreak, and we intended to include the ascent of the Bächlistock in the day's work.

On September 13 Coolidge and myself, accompanied by young Christian Almer and his brother Rudolf, left Grindelwald, sleeping that night at the comfortable Schwarzenegg Hütte. Next day we crossed the Strahlegg pass in splendid weather. We found the celebrated wall entirely rock, and more troublesome than when in its snow-covered condition. Proceeding leisurely down the Unteraar glacier we reached the Pavillon Dollfuss in good time in the afternoon, and were there met by a porter from the Grimsel with a fresh supply of provisions for which we had telegraphed before leaving Grindelwald. At daybreak on the morning of the 15th some heavy mists hung over the Finsteraarhorn and some of the other great peaks, but they fortunately cleared off and we had a perfect day. Had it been otherwise we should certainly have failed in our expedition, as our progress was necessarily so very slow that a cold wind or bad weather would have made it impossible. Leaving our night quarters at 5.45 A.M. we mounted along the stream east of the Kühtriften up grass slopes strewn with boulders, and then by a tiresome moraine to the west branch of the Vorder Trift glacier, and climbing over that without any difficulty arrived on the Hühnerthäligrat at 7.35 A.M. in under two hours from the Pavillon Dollfuss. Here the real difficulties began, and they were neither small nor few, as may be gathered from the fact that the ascent, which is only a little

Meyers' account of the Jungfrau; but the expedition was made "many years ago" and Herr Studer (*Ueber Eis und Schnee*, vol. i. p. 232) dates it between 1790 and 1800. The writer, having reached the level of the Gauli glacier, says that it is possible to go along the flank of the Ritzlihorn and up this ice basin, past the mountain mass called Hühnerthäli and through a small ice valley, finding a track which leads to the Grimsel. He allows that this would have been a much shorter way than the Gauli pass, which, however, they crossed, wishing to get a better view of the ice regions. Herr Studer's reference in the *S. A. C. Jahrbuch* should be 717, not 711.'

over 700 feet from the pass, took us 2 hrs. 40 min., while the descent required $3\frac{1}{2}$ hours' almost incessant hard work.

We began by traversing steep snow-slopes to the base of the N.E. face, and climbed slowly upwards by that face, but did not dare to proceed very far across it; partly owing to the obvious danger of falling stones, and partly to the impracticable-looking nature of the face itself, we were gradually forced on to the east arête. An idea of the loose nature of the mountain may be gathered from the fact that a stream of water, evidently originating from the glacier on the south-east face of the mountain, actually flowed through the peak and came out on the north-east side some little way above the pass. I must specially mention the extreme smoothness and the gigantic size of the great granite blocks through which we had made our way along the arête. They did not merely lie across it, but actually formed it, jutting out in a most extraordinary and menacing manner, and at almost impossible angles, and seemingly as unstable as a child's house of bricks, where if one of the lower bricks were removed the whole structure would come crashing down. Some places we passed where we could feel a great block over which we were passing slightly move, which caused a most uncomfortable sensation. Every step was difficult, and we had literally to feel our way; it was not safe to trust to any single rock without testing it, while high above us on the arête a huge flame-coloured rock presented a flat overhanging face towards us and seemed to bar the way to the top of the mountain. Coolidge seemed to think that it was possibly the top of the mountain itself, and as it certainly did not look as if it could be climbed, we were constantly anxious until we came up to it and found that he was wrong. Many and anxious were the looks we cast at that unpleasant rock, and as at nearly every step we took the difficulties of the way seemed to multiply, I for one dreaded that when we reached that point we should find we had to come to a full stop and would have to simply retrace our way without the top of the mountain in our pockets. Like many other things feared from a distance, we found on reaching this dreaded point that, though difficult enough, we were able to circumvent it and regain the arête a little above it. Then the way before us seemed possible, but until nearly the very last point it required the utmost care and was loose and untrustworthy. Shortly after passing our red rock Christian Almer declared, 'Der Hühnerstock ist unser,' and at 11.5 we stood on the top of our conquered peak (10,985 feet).

The weather was lovely and the view exceedingly fine; immediately to the west and lower than where we stood lay the frequently ascended Ewigschneehorn. Beyond that the Schreckhorn and the Wetterhörner stood out magnificently, and with the vast mass of the Gauli glacier—of which a remarkable feature was the black and white moraines (the Schwarze and Weisse Gandegg) flowing side by side—formed a most delightful panorama. However, so many views from different points in the Oberland have been described, that in these latter days of mountaineering it is unnecessary to enlarge on that point. We could not have made the ascent under more favourable circumstances or in better weather. We had every chance of thoroughly examining the peak from the top, as we remained there for an hour, and it certainly seemed to us that we had followed the only practicable route. Early in the season, with snow upon the loose rocks, it must be almost too horrible to think of attempting. As we had met with so many difficulties on our way up, we naturally tried to find out some better route for the descent, but could find none. On the south-east side of the mountain the glacier and a field of névé mount to a considerable height, but unfortunately they are cut off from the upper rock-terraces of the peak by a precipice of about 200 feet.

In order to avoid the most difficult part of the ridge, we began the descent at 12.15 by the south-east face, but after a while found that in point of lessening difficulties we gained but little, so we returned to the arête a short distance below our bugbear the red rock, and continued the descent by the way we had taken in attacking the peak, again passing a remarkable spot near the arête, where the great slabs of granite are gathered together like a bouquet, overshadowing our way, and looking as though they might descend upon us on the slightest provocation. Indeed, there was very little, if any, chance of varying our way much, and some of the places we had found bad in the ascent were abominable in the descent; in fact it was one continual 'hold on!' and as we said to Christian, who had led us up admirably, and came down last, he must either be gifted with suckers like a fly, or have his boots and hands prepared with some mysterious hold-fast.

In descending the lower part of the north-east face the extreme smoothness and comparative absence of handhold and foothold considerably added to our difficulties, and one or two places I shall never forget. They were almost too bad, and the strain upon our nerves was very severe. In

these places my size and weight told against me, as we had some very nasty steps to take along narrow ledges where the rock overhung and pushed me outwards, while as for Coolidge, although he had the advantage over me in that respect, he was handicapped by not being able to stretch himself as far as I could, and could not avail himself of some handholds which materially helped me, finding himself, therefore, in almost a worse case than myself. I do not remember ever having to take more elaborate care in order to avoid destroying those below me on the rope by sending down stones, and in some places, not actually difficult, it was necessary for each man to move singly while those below moved aside as far as they could until we were all three huddled up together, to give Christian a chance of coming down. I venture to say there is nothing more trying in the whole art of mountaineering than a struggle with such a loose peak as the Hühnerstock, where mind and body are both on the strain, and where every step has to be tested before taken. We all felt delighted when we got back (3.45 p.m.) to the pass, principally because we had conquered the Hühnerstock, and had found it so much tougher a fowl than we anticipated, but also because we were desperately hungry and thirsty, as we had been absent from the provision knapsacks for rather over seven hours, and had carried very little with us. The descent had taken nearly an hour more than the ascent. After a rest on the pass, and having counted up damage to clothing, and bruises (of which my right leg was a perfect mass), we descended rapidly to the Unteraar glacier, which we reached just before sunset, and then had three hours of stumbling in the dark over glacier and moraine and the Unteraar Alp to the Grimsel hospice, which we reached at 8.35 p.m., Coolidge having left most of his boots behind him, on the moraine of the Unteraar glacier, while for my part, one or two stumbles in the dark by no means improved the condition of my clothing, and when I examined my boots next morning they had no nails to speak of left in them.

THE BUILDING OF THE ALPS.*

BY W. MATHEWS.

THE geological history of the Alps is a problem which has long attracted the attention and exercised the powers of some of the ablest geologists both of this country and of the Continent ; but it is only quite recently that it has been attacked by a writer who enjoys the unique advantage of having successively occupied the presidential chairs of the Alpine Club and the Geological Society, and who unites in a single mind the experience implied by the former distinction with the knowledge implied by the latter. The anatomy of one of the great Alps is familiar, in its broader features, to every mountaineer who climbs with his eyes open and possesses the rudiments of geological knowledge. In ascending from the plains, strata of sedimentary origin are seen dipping away from the peak, and are passed in succession from newer to older as he rises higher. Suddenly they give place to the rocks known as crystalline, which occupy the entire core of the mountain and are the material of its highest summits. The most important constituent of a crystalline rock is quartz, which is frequently associated with felspar and with one or more of the minerals mica, talc, chlorite, and hornblende. The crystalline rocks are divisible into two groups, the *granitic* and the *foliated*. The former occur in compact masses or veins, exhibiting no signs of stratification, and their crystals have no definite arrangement. The latter appear to be rudely stratified, and their crystals are disposed in thin laminæ approximately parallel to the surfaces of stratification. From their tendency to split along the planes of foliation they are called *schists*, and to distinguish them from other rocks of a fissile nature they are termed crystalline schists. Granitic rocks are comparatively rare in the Alps. The cores and summits of most of the great Alpine ranges are built up of crystalline schists, among which mica schist, composed of alternate plates of quartz and mica, dear to the climber from the support it affords to hand and foot, may be mentioned as a familiar example.

* 'The Building of the Alps.' A Lecture delivered at the Royal Institution on April 4, 1884, by the Rev. Professor Bonney, D.Sc., F.R.S., President of the Geological Society. Address delivered at the Anniversary Meeting of the Geological Society on February 19, 1886, by the President of the Society.

It is not always the case that the sedimentary strata appear to rest upon the crystalline. It sometimes happens that the former have been tilted through an angle of more than 90° , and that the crystalline schists exhibit a fan structure and are seen, on both flanks of a mountain, overlying sedimentary rocks. There seems, indeed, to be no limit to the extent to which the members of a mountain massif may be folded, contorted, and faulted. It is by no means a rare occurrence to pass the outcrops of a series of measures in one order of succession and to pass them again in the inverse order in walking in the same direction across the line of strike.

It was the belief of the older school of geologists that granite was the primitive material of the world, and that when it consolidated from a molten state the sedimentary strata were derived from it by the ordinary agencies of denudation. When, however, geologists observed that granite had been injected into fissures in sedimentary rocks, the theory became untenable and gave place to one of exactly the opposite character. It was held by the successors of the earlier school that granite might be of any age from the earliest Palæozoic to the latest Tertiary, and might be, and probably was, in process of formation at the present day. What was true of the granites must also, it was urged, be true of the crystalline schists. The latter were regarded as altered sedimentary rocks, the chemical constituents of which had been rearranged under the influences of heat, water, and pressure. They were, therefore, called *metamorphic*. These views derived confirmation from the fact that it is impossible to draw an exact line between the two groups of crystalline rocks; there are some of which it cannot be said with certainty whether they should be described as schistose or granitic. The theory that the crystalline schists may be the altered representatives of sedimentary strata of any age has been held by many of our most distinguished geologists, and by none has it been more strenuously supported than by the late Sir Charles Lyell.* Notwithstanding the influence of so great an authority the belief in the antiquity of the crystalline schists is rapidly gaining ground among geologists. The questions of the age and genesis of these rocks are the very root of the geological history of the Alps. If we cannot tell whether a schist is older than the oldest known fossiliferous rock or whether it

* See 'Elements of Geology,' 6th edit. 1865, chap. i.

is an altered Tertiary, any real knowledge of that history is impossible.

These questions, with some others of a subordinate nature, are handled with signal ability by Professor Bonney in the two addresses the subjects of this notice, and especially in his last presidential address to the Geological Society. I cannot attempt in the space at my disposal to give any analysis of the argument, which is founded on a comprehensive review of the structure and geological relations of the metamorphic rocks not of the Alps only, but of Canada and Great Britain. I must limit myself to laying before the readers of the 'Alpine Journal' the main conclusions arrived at by the author. They may be stated in the following terms:—

The metamorphic rocks, or crystalline schists, of the Alps occupy in the aggregate a great thickness and represent a vast period of geological time.

They are divisible into the following groups and sub-groups, the first named being the oldest:—

1. (a) Granitoid gneisses.
2. (b) Banded gneisses.
3. { (c) Micaceous gneiss.
- { (d) Mica schists, with garnet, &c.
- { (e) Schists, variable, with garnet, &c.
4. (f) Brown bedded schists (*schistes lustrées*).

It is probable that some of the older schists, such as the granitoid and banded gneisses, have been formed by metamorphosis from previously existing granitic rocks. As, however, we ascend higher in the series the rocks show indisputable evidence of stratification, and to these latter it is impossible not to assign some kind of sedimentary origin.

Whatever this may have been, the uppermost group of schists is indisputably anterior to the lowest Palæozoic rock, so that the whole metamorphic series belongs to the period which has been variously termed Azoic, pre-Cambrian, or Archæan.

Of the nature of the agencies by which the metamorphosis has been effected very little can be confidently asserted. 'Heat, water, pressure,' says Professor Bonney, 'have no doubt had their share in producing the result, but they appear to have co-operated over vast areas of the earth's crust in a way that seems inconceivable under existing conditions.'

Especial attention is drawn to an effect of one of these agents which has hitherto been somewhat overlooked. It is

well known that the result of pressure in fine-grained sedimentary rocks is the development of the structure called cleavage. This, in extreme cases, is associated with the production of minute films of mica, which give a silky look to the slate. Pressure, in like way, acting upon crystalline rock, whether granitic or foliated, crushes certain of the constituents, sets up a structure analogous to cleavage, and is often followed by marked mineral changes. Moreover, owing to unequal yielding of constituents, in directions perpendicular to the direction of pressure, an appearance of bedding is simulated; zones of rock which have been affected by crushing to a greater or less degree alternating with one another, sometimes rather sharply distinguished, sometimes the reverse. Thus a new foliation may be produced in a rock already foliated, which will modify the earlier structure, may co-exist with it, or may even obliterate it. To this latter structure Professor Bonney gives the name of *cleavage foliation*, as distinguished from the earlier structure, which he calls *stratification foliation*, because it appears usually to be parallel with the surfaces of the larger masses, differing in mineral composition, and thus having a stratiform aspect. Thus in the Alps the gneissoid character of some of the more coarsely crystalline rocks is sometimes the result of pressure, and the mica schists, apparently interbanded with them, are merely zones of more highly crushed rock. Although it may be sometimes impossible, on this account, to speak confidently of the origin of a rock, the author holds that, in the majority of cases, cleavage foliation can be distinguished from stratification foliation, and that the difficulty is mainly confined to the older or more coarsely crystalline portions of the Alpine masses.

The age of the crystalline schists having been once established, the subsequent history of the Alps, although still anything but an easy problem, becomes less difficult to follow. It is narrated in the earlier of the two addresses, viz. that delivered at the Royal Institution in 1884.

The oldest fossiliferous rock which occurs in the Alps is one of the members of the Carboniferous series. During the earlier part of the Palæozoic era the crystalline schists, substantially in the same mineral condition as they are at present, formed a land surface, possibly of a hilly or even mountainous character, and before the close of that period had been folded and denuded on an extensive scale. In Carboniferous times a period of depression set in; this,

perhaps at first local and interrupted, must have been continued from the Trias through the whole of the Secondary era into that of the early Tertiary, as beds of all ages are found in the Alps in a comparatively unbroken succession from the Carboniferous to the Eocene. It is in the later part of the Eocene period that we have to date the first of those lateral thrusts in the earth's crust to which the mountain-making of the existing chain of Alps is due, and which gave to rocks of earlier Eocene age a part of their present maximum elevation of upwards of 11,000 feet above the sea. Thus we find that there existed in Miocene times a great mountain chain of crystalline and Mesozoic rocks which covered nearly the same ground as the present Alpine region. In this period were deposited the pebble beds of the Nagelflue and the sandstones of the Molasse. As the pebbles in the former contain a very large proportion of Mesozoic rocks there is reason to believe that such rocks almost entirely covered the crystalline schists.

Then came another contraction of the earth's crust; the solid mountain core was again compressed and uplifted and thrust over newer beds. The extent of this second elevation is shown by the pebble beds of the Rigi, which occur at an elevation of 6,000 feet above the sea. It is a noteworthy fact that Miocene beds are found at a much greater elevation on the northern side of the Alps than on the southern, so that the second set of movements appears to have been more effective on the northern side. We have here an easy explanation of the creation of the sub-Alpine district of northern and western Switzerland, of the greater steepness of the Alps on the Italian than on the German side, and of the greater length of the valleys on the former.

Such is the history of the building of the Alps, a history repeated, in many of its essential features, by other of the east and west mountain chains of the Old World, as the Pyrenees and Himalayas. It impresses us, on the one hand, by the antiquity of the rocks which are the most important constituents of these ranges, on the other, by the modern date and vast extent of the movements of the earth's crust to which they owe their elevation.

ON THE USE OF ALCOHOLIC STIMULANTS IN MOUNTAINEERING.

By W. MARCET.

(Read before the Alpine Club, June 7, 1887.)

AT a meeting of the Alpine Club held on February 1 of the present year the Secretary made a statement as to a certain sum of money having been paid for spirits used by the Club. Not that its members should require artificial stimulants to promote cheerfulness and good fellowship amongst themselves, but nobody can take exception from the fact that the money was well spent.

The question of the use and abuse of alcohol is as old as Noah, who planted the first vine; Horace sang the virtues of his beloved Falernum; and it is not likely that Diogenes, that worthy philosopher, who selected to live in a wine cask, should have felt for Bacchus any peculiar abhorrence.*

The abuse of alcohol does not come within the scope of this communication, the object of which is to treat exclusively of the use of alcoholic stimulants in mountaineering. A flaskful of brandy, kirsch, or liqueur—and anisette or green Chartreuse is often pronounced the best—not unusually forms part of the climber's kit. Some people are subject to giddiness when looking over precipices, and rely on the contents of that straw-matted bottle slung across their shoulder as a charm against vertigo. Others are susceptible of cold; they think nothing can beat successive appeals to a trusty flask when the icy wind catches them round yonder corner, or when the chilly damp fog drifts across their faces; or, worse, should snow and sleet and a bitter head wind tell like needles driven through the flesh. Some young men who aspire to mountain fame, unwilling to confide just yet to personal pluck in ticklish places, are careful not to forget the valuable brandy flask; a timely swig is to give them that courage and strength they lack in cold blood, and with such precious assistance they feel sure of overcoming every difficulty.

I am in no way a total abstainer, nor do I advocate anything of the kind, agreeing with those who hold that a

* A friend of mine at Geneva wrote as follows many years ago:—

‘Et croyez-vous que Diogène
Ne but jamais que de l'eau ?
Ah pour Bacchus quelle haine
Que de vivre en un tonneau.’

moderate amount of alcoholic stimulant taken at meals is consistent with and conducive to health. Hence I understand Lieutenant Greely, commander of the Lady Franklin Arctic Expedition, 1881-84, who states in his narrative that two gills of rum weekly for each man were undoubtedly productive of beneficial effects, as they invariably tended to enliven the spirits and increased the cheerfulness of the men. In no instance was rum served regularly either in quarters or in sledge journeys. Indeed, Lieutenant Greely had a wholesome distrust of the daily use of stimulants, as shown in the following remarks: 'My dietary was shaped on the assumption that scurvy is a disease resulting from malnutrition, which would be fostered by dampness, uncleanness, mental *ennui*, too strict discipline, excessive exercise or labour, and by *regular* and *systematic* (the italics by the author of the quotation) use of alcoholic beverages.'

If brandy were carried in an attack upon some lofty summit likely to be attended with danger, as stimulants for the wounded in a military campaign, I would call this a wise precaution, and the following is a case in point.

In 1873 I visited, in company with three friends, one of those remarkable caves in the limestone rock of Mont Salève, near Geneva, owing their existence to the action of torrents, from the melting ice, towards the end of the glacier period. We had occasion to descend, on our return, a very steep couloir of rounded stones and pebbles. Suddenly one of the party, a young man seventeen years of age, who had been stooping to pick up a stone, lost his footing and fell, when he rolled down the couloir, and a bush happening to be in the way was cleared with a bound, as by one of those bare trunks of pine-trees often shot down similar places. His wild descent of over a hundred feet was suddenly arrested by a small tree, and we found our friend—his head bent forwards and the back of his neck and shoulders resting against the tree. He was quite unconscious and violently convulsed; his face was covered with blood, and several deep wounds on the scalp looked very much like serious injury to the skull. Two of us remained on the spot, doing their best to control the involuntary struggles of our wounded friend, while the fourth member of the party went to the nearest village for a ladder; and after a time, which appeared dreadfully long, we saw men hurrying up to our assistance. Our unfortunate companion was then made fast on a ladder, still perfectly unconscious, and we took him down to his father's residence, fortunately not far off. On the way his pulse,

which, though very feeble, had shown no signs of actual failure, suddenly became exceedingly weak, and this, together with the blanched complexion, made it apparent that matters were taking an alarming turn. Had anybody got brandy? was anxiously asked. Yes, brandy was at hand; one of us carried a flask in his pocket, though no use had been made of it so far. A small quantity of the stimulant was given with marked and most satisfactory effect: the pulse returned to the wrist, the complexion improved, and with a few drops of the cordial given from time to time we carried our patient to his residence none the worse for the journey and inevitable jolting. He only returned to consciousness the next day in the afternoon, and from that time his perfect recovery was steady and rapid. It is well known that the shock after an accident is seldom fatal, even when the failing of the heart may have given great anxiety; but the action of brandy in this case was so prompt and obvious that it gave us all very great relief at the time. I may be allowed to add that of that party of four three had subsequently the honour of being elected members of the Alpine Club.

I shall dismiss with a few words the use of stimulants against giddiness when looking over precipices, or when taken to give courage in places of apparently doubtful safety; such a practice is sure to lead to repeated appeals to the flask or pocket pistol, and be productive of insecurity and danger by drowning in the treacherous draught that coolness and self-possession indispensable to personal security in the High Alps. To those who make use of alcoholic beverages with such objects I would say, much better stay at home than tempt the genius of those lofty summits where man has set his foot in spite of the legends of old making them inaccessible.

Stimulants are often considered as increasing the power of resistance to cold, and against such a mistaken idea I must beg to enter a most formal protest. Our great authority on hygiene, Dr. E. A. Parkes, bears out that opinion most emphatically, remarking in his treatise that 'all observers condemn the use of spirits, and even wine or beer, as a preventive against cold,' and he quotes the experience of many Arctic travellers in support of his views. I might add that Captain Sir G. J. Nares* remarks as follows on the occasion of a sledge expedition sent out in the month of October: 'The usual ration of spirits at

* *Narrative of a Voyage to the Polar Sea, 1875-76.*

lunch was changed for tea, and this alteration in the diet was reported on favourably by everyone without exception. The objection,' adds the author, 'is the time required to make the tea.'

Dr. Rae, the well-known and distinguished Arctic explorer, expressed to me his opinion on the use of alcohol in the Polar regions in the following interesting letter he kindly allows me to communicate :—

'In reply to your note on the subject of alcohol and its effects, I gladly give you the result of my experience—i.e. that strong drinks of any kind are most injurious in cold, and more especially when men are or have been undergoing fatigue. Our people in the Hudson Bay Company's service are so well aware of this that in travelling in winter, if offered a glass of spirits—say rum, whisky, or brandy—whilst on the day's march on snow shoes, they will, although fond of grog, decline it, saying, "If you please to give it when we encamp at night:" that would be after a good supper and before a good fire.

'I was so confident of the bad effects that when employed on five Arctic journeys in 1846-7, 1848, 1849, 1851-2, and 1853-4 I took no spirits for either self or men. I have traced up several occasions where persons had become drowsy (imputed wholly, but wrongly, to the effects of cold), sat down, and were frozen to death, and I found that in every case the person had taken some spirit, not necessarily a large quantity, before going out of the house in the cold air.'

Dr. Rae next quotes his personal experience when out amongst the Scottish hills at a deer drive. The good lady of the house had supplied each sportsman with a small flask of brandy. The day became very bad, and there blew a gale of wind attended with a fall of wet snow. On the party assembling at the rendezvous there was an eager enquiry for whisky, but every flask was empty. The author had given his supply to his gillie and taken none; and it was remarked he was the only one who did not look cold. 'Nor,' he adds, 'did I feel cold.'

This letter is a powerful argument against the use of alcohol as a protection from cold, and I would draw especial attention to the author's remarks on cases of death from cold after the ingestion of spirits, though not necessarily in large quantities, before going out into the cold air; it is easy to imagine the disastrous effects produced by repeated appeals to the brandy flask in the bitterly cold

nights of Alpine regions of eternal snow. No alcoholic stimulants should be taken at the high bivouac the morning before a hard day's climbing; and it is all the more important to abstain from liquor of any kind when unfortunately benighted without shelter amongst those solitary peaks and passes where at night, even in midsummer, cold reigns supreme.

The experience of Arctic travellers is supported by powerful scientific evidence and medical authority, as it is a well-known fact that alcoholic spirits, instead of promoting animal heat, actually gives rise to a cooling effect by lessening the combustion on which man has to depend for his natural warmth.

Dr. Clifford Allbutt, F.R.S., in an interesting communication to the 'Alpine Journal,' vol. viii., remarks as follows:—'There are absurd prejudices abroad against milk, all based upon ignorance and blindness. A man who says one minute that milk "takes the legs away" will be seen a minute later pulling at a flask of kirsch. Now if there be one thing in training more certain than another, it is that all alcoholic drinks during work are distinctly injurious. Claret and water may be so weak as to do a harm which is barely perceptible, but I have seen many a "tuchtiger Herr" the worse for a long pull even at red wine. Spirits are simply poison to the climber, and indeed, as Mac-laren says, are to all young healthy men as vitriol to steel.' I cannot but endorse thoroughly Dr. Clifford Allbutt's statement. It is no reason, however, because alcohol is attended with such baneful effects that a person found in the snow, sleeping the sleep of death from cold, should not have brandy given him to restore animation; but the treatment is only to be resorted to when warmth can be applied shortly afterwards, either by rubbing the body and wrapping it up in blankets in a bed, or by any other means short of the direct application of heat, which would be decidedly objectionable. Alcoholic stimulants excite the circulation enfeebled by a low temperature, and the subsequent means adopted towards producing warmth will keep up this beneficial action.

With the object of obtaining some precise and reliable data from persons experienced in the treatment of suspended animation from the action of cold, I wrote to the *chanoines* of the Great St. Bernard, and the 'infirmier' of that old and hospitable convent, so well known to all amateurs of mountaineering, most obligingly supplied me with inte-

resting information on the subject. The letter begins by condemning the use of alcoholic liquors in mountain excursions. After giving a theory of the cause of their baneful effects the letter proceeds to describe the sleep and torpor produced by cold, which the brethren counteract as much as possible by forcible exercise and a glass of good white wine; and, the author remarks, 'in order to neutralise the pernicious effects the wine might have, we make them take a piece of bread. Be careful to observe that we never use brandy or liqueur while the benumbed travellers are on the mountain, but when they have reached the Hospice they are treated, in order to promote warmth, not with pure brandy, but brandy mixed with hot sugar and water. . . . If, in consequence of excessive fatigue, the travellers should be attacked by syncope (faintness) we give them a teaspoonful of "alcool de menthe de Riglès," or of the elixir prepared at the Grande Chartreuse, in half a glass of water. It is also advisable to get them to breathe through the nostrils and to rub their temples and forehead.'

On my requesting the *chanoine* to quote any particular case illustrating the ill effects of alcohol, he wrote to me as follows:—'In 1880, on December 4, a poor Italian workman left the Cantine de Proz at about four o'clock in the evening after having taken a glass of brandy in accordance with his habits, and in spite of the advice given him at the time. An attempt to prevent his leaving the canteen that night was unsuccessful, and as at that time there were neither telegraph nor telephone no timely warning could be sent us that assistance was wanting. The next day a second traveller reaching the Hospice about eleven o'clock informed us he had met a man asleep in the snow. We went out immediately to look for him, but, alas! he was found sleeping the sleep of death.' From enquiries made by the monks from the inhabitants of the Cantine de Proz they ascertained that the man had been drinking brandy before getting under weigh. The weather was beautiful, the sky clear and fine; the moon was out and the track at that time well marked; and the writer expresses his opinion that the brandy had exhausted the man's strength and induced him to lie down.

Spirits are not unfrequently resorted to in the mountains, under the impression that strong drinks relieve the exhaustion following great fatigue, as, for instance, after a long march in soft snow. If the excursion has to be continued, and more fatigue undergone, there is no greater error than to take brandy, which will inevitably—and still more so after

successive appeals to the flask—destroy what little strength is left. Hence better drink no alcohol at all under such circumstances than risk to see one's ship brought up sharply at an unexpected anchorage. As to the use of stimulants after great fatigue when the day's work is ended and no further exertion required, I really see no objection to them in moderate quantities, though disapproving of pure spirits of any kind. Wine and water at supper will help to restore the action of the heart, while the sleep at night will supply every function with renewed strength and vitality by next morning; but an overdose of the stimulant, by causing too great excitement and interfering with sleep, would effectually prevent the needed rest.

Moreover there is, I think, a time when alcohol might be useful in the act of climbing and in a fatigued condition of the body. I am now alluding to a person feeling very tired and hardly able to go on, although the last bit has still to be ascended. The goal is at hand, the battle all but won, but the legs refuse to carry the body any farther; and now a draught from the brandy flask or from a bottle of wine, together with a few minutes' rest, may turn the tide and ensure victory. I recollect, when on a cruise along the coast of Norway, how, by some unaccountable mismanagement of the pilot, the yacht grounded in a fjord, though in smooth water. A village was close by, and the inhabitants crowded in scores to gaze upon us. Two anchors were carried out astern, the villagers being called upon to come on board and hawl at the hawsers. But their united power was useless; the vessel showed no signs of moving. It then occurred to me that a drink of spirits might assist, and I sent for what distilled liquor the place could supply. Each had his share, and then I set them to pull again, when the yacht—a heavy boat of fifty tons—glided into deep water as it were quite readily.

Mountain sickness, the climber's enemy, is certainly neither provided against nor relieved by the use of alcoholic beverages. It was customary some years ago to ascend Mont Blanc from the Grands Mulets with no sustenance on the early start but one or two glasses of hot wine, or wine and water; at all events not even coffee and milk could be procured when I was there in 1868. Since then, however, I am glad to say matters have greatly improved, and even the following year I found better food at the hut. The *Hôtel des Grands Mulets* is now, I understand, under the management of my former trusty and excellent guide Edouard Cupelin,

and there is no fear of a scarcity of fresh supplies under such a practised caterer. Few, however, have any appetite for solid food at one o'clock in the morning, and hot stimulants appear at first sight the best thing to take before going out into the cold air; it may be added that after a bad sleepless night giving no rest, there is an instinctive desire for artificial excitement, mistaken for strength. With such a bad beginning of the day's work, the ardour of the ascensionist is not unlikely to be arrested by an attack of mountain sickness brought on before the time has come for the substantial breakfast. The stomach now absolutely rejects every kind of food, and the weakness and sickness increasing, it is found necessary to beat a most disappointing retreat. Had an early breakfast of coffee and milk, with an egg or an omelet, been taken instead of the hot wine, it is probable that events would have taken a very different and more satisfactory turn. The best preventive of mountain sickness is food easily digested, such as coffee and milk, or tea taken in small quantities at frequent intervals. Any alcoholic beverage brings on an attack all the sooner, and increases the distress. I have known the substance, much used in medicine, called potassium chlorate, or chlorate of potash, taken in ten or fifteen grain doses dissolved in water prove very useful as a preventive or cure of mountain sickness, and would advise those who may be subject to that kind of illness to take some with them; it keeps very well in powders wrapped up in paper and enclosed in a wide-mouthed bottle.

Some, if not many, climbers, although used to the mountains, lose their appetite for solid food at certain elevations in the Alps. I am personally in that case, although, thanks, I believe, to the warm climate of the Peak of Tenerife, where I spent three weeks in 1878, sleeping under canvas eleven nights at a height of 10,700 feet, I could eat meat as well as in the plain, and my appetite was excellent. I made a similar observation, at 10,000 feet, on the rocky mountains of Colorado, and cannot help coming to the conclusion that the cold rather than the lightness of the air, or the two acting together, are the main circumstances which often interfere with the functions of digestion in the High Alps. The food I always found to agree with me best in the Alps was milk, coffee and milk, tea, chocolate, bread and cheese, sardines in oil, and raisins. . . . I never carry brandy or any spirits, but have often enjoyed the wine drunk at luncheon and after reaching the object of the ascent, and to such innocent libations surely nobody can object.

An apology is certainly due for my having entertained the Club with so dry a subject, but a little hygiene in Alpine sport is not misplaced. There is always a risk of becoming dogmatic when writing on the use and abuse of alcohol. My object is far from anything of the kind. I do not say that alcoholic beverages in their various forms are fatal to mountaineering; indeed, I have shown them to be useful in some cases. It is hoped that the present paper has made it clearly understood that strong drinks do not give strength, and, as a means of keeping the body warm, they go on the opposite tack, doing away with the natural power man possesses of resisting cold, and thus acting as a *delusion and a snare*.

NUGÆ ALPICULARES.

By H. B. GEORGE.

(Read at the Annual Meeting of the Oxford Alpine Club, November 1882.)

HAPPY is the nation whose annals are a blank; but happy is not the secretary of a society whose members have, for one reason or another, not been adventurous, when a paper is wanted for the annual meeting. I must confess myself to have achieved no more than my neighbours. The weather pushed us down into Italy after ten days of Dauphiné. The only novelty I can record is having seen the great chain of the Alps laden with an amount of snow probably unparalleled at the end of summer. For want of more thrilling topics I propose to ask you to listen to a brief account of mountaineering on a more modest scale and without guides. It is, perhaps, but a chronicle of small beer; but after all, when ale and wine are gone and spent, or when we lack opportunity to procure them, then small beer is most excellent.

The weather was still dubious when our party of four quitted the little inn in the Schuldig Thal, in which we had been imprisoned all the previous day by pouring rain, to attempt to make our own way up the Dachspitze. Two of the party, whom I will, with your permission, call Brown and Robinson, were more or less novices in mountaineering. Jones and Smith had, at any rate, so much experience as is implied in being members of the Alpine Club. Up to the highest houses in the valley our way was simple and uneventful enough, except that a heavy storm drove us to take shelter for some time, and nothing but the obstinate hopefulness of Smith prevented our giving in to the rain and returning to another day of protracted lunch and desultory whist. Thence a faint track led steeply up the mountain-side to the right, and presently became once more fairly well traced as we mounted to the upper level of the lateral valley leading to the Stallenkopf Pass. On the north side of the pass, which, from the gradual character of the final ascent and the abruptness of the descent on the other side, bore a

marked likeness to the Maloja, we found one of the small lakes so common on the passes of Tyrol and the Engadin. Here, as we had no chance of water higher up, and had preferred trusting to the pure element—not, perhaps, unqualified—to the trouble of carrying bottles, we halted to make what Brown, who had had the last turn of the provision knapsack, described as a more equable and secure adjustment of its contents. Then turning sharply up to the right, we proceeded to tackle our peak. The weather at this period could scarcely be better described than in Oxfordshire vernacular as ‘extremely middling.’ It allowed us to see about to the middle of the lake at our feet; it showed us the middle, but not the sides, of the rough slope of rocks and snow up which, as the map seemed to indicate, our route lay; and when we rose above the level of the pass it allowed us to see the middle of a lake shining far away below, and also bits, which may or may not have been in the middle but certainly were not at the top, of the peaks which stood around. The slope, though easy enough, was undeniably steep, and Brown and Robinson, probably carried away by mathematical zeal to investigate practically the angle of least resistance to the course of a heavy body propelled upwards by the force of (cold) π , diverged very considerably from the straight line. As they were approaching uncomfortably near the precipices which cover the whole southern face of the peak, Smith went off to look after them, while Jones continued his upward course, in order to lose no opportunity, whenever the mists opened, of reconnoitring the unknown ground that lay between us and the summit. Alas for the laws of motion! Smith found that the initial velocity attributed to π had become exhausted through the pressure on the wind, and that Brown and Robinson had sought for repose on a convenient stone. Before long, however, they were again struggling upwards like mathematicians refreshed. Meanwhile Jones had made his way to the top of the first steep slope of rocks, and found the snow deeper and the mist thicker than ever. After waiting till the rest of the party came in sight, and assuring himself that they could not fail to cross his track, Jones again pushed forward, diverging somewhat to the right, as in that direction the slope, now of very moderate inclination, was rather steeper. When you are in doubt, lead trumps is an old maxim for whist, though the modern science of the game hardly considers it infallible. When you cannot see your way up a mountain, take the steepest course, is at least equally questionable, but it fairly often holds good, and this ascent was a case in point. The incline grew less, and we presently found ourselves seated on a cairn which commanded a horizon of about ten yards’ radius. The top of the mountain is spacious enough, but there was no doubt that the ground sloped away in all directions; and the evidence of the cairn seemed conclusive that we were on the highest point—not a secondary one—while our sensations were equally conclusive as to the desirability of quitting it promptly. Before starting we had planned to descend by the northern face, which would bring us eventually back to near our starting-point, but by another valley. The ascent had been so easy that we did not hesitate to adhere to this purpose, in spite of the weather. Brown and Smith

both produced compasses, which agreed indifferently well in the bearings they indicated, and Jones was told off to lead down into the still thicker fog which lay below the peak to the north. Obedient to the calls from the compass-bearers behind, he diverged to the right from the line originally selected, and having once begun to do the wrong thing, of course exaggerated the error, until presently we had described a considerable curve and come back into the line of ascent, fortunately only a little way below the summit. It seemed safest and easiest to return to the top and make a fresh start; and this time the leader, turning a deaf ear to remonstrances from behind him, landed safely at the bottom of a small secondary peak, close beside which the best route lay. It is needless to record the rest. We enjoyed for a few minutes, through the opening mists, a lovely view down two diverging valleys, in one of which the sun, otherwise to us invisible, was reflected from a dazzling sheet of water; and everyone got stuck in the mire, some less, some decidedly more, in descending the last steep bit of boggy ground into the road. It was not a great success, the day's work, so far as seeing views went; but we celebrated it with some hilarity, as being positively the first appearance of one of the party on any mountain stage.

Two days later we started under more promising conditions of weather for the more formidable ascent of the Schaufelspitze. But weather forecasts are made of even thinner pie-crust than other promises. Before we had fairly reached the base of our peak the clouds were everywhere thick; by the time we had surmounted the lower slopes we were fighting a furious wind. The mists were so dense that without the aid of occasional little cairns erected to guide travellers we could never have found the right way, while the wind rendered it a matter of continual doubt whether we should succeed in planting our feet where we intended, or be compelled to accept whatever footing the gust might select for us. As most of the way was over rocks thinly covered with snow progression was neither rapid nor easy; and when we reached a small depression which must be passed before scaling the final peak, Robinson, whose strength was scarcely fit to bear so rude a test, found it necessary to give in altogether. The gale was screaming so furiously that it was only by signs that he was able to inform the next man of his intention to stay where he was. The others in due course reached the summit; and the view had best be described in the graphic words of Brown, who next day recorded in the visitors' book at our inn that we had on Saturday ascended the Dachspitze and had a grand view of twenty yards' diameter, and that having on Monday ascended the Schaufelspitze, we were in a position to confirm the statement in the book that the former commanded considerably the finer view. Our descent was made not without some risk of being blown away altogether; but when we reached the spot where Robinson had last been seen sitting disconsolately and alone, and making no attempt to conceal his misery, he had vanished! There was no reason to think the mountain had opened and swallowed him, like the children who had followed the Pied Piper of Hamelin; but when we had pursued the trail for some distance and found no trace of him, we began

to think he must have taken effectual shelter somewhere. Accordingly Smith went back once more to the unmistakable spot where Robinson had halted, while the others continued the descent. Before long they found the desired footsteps pointing down; it must have required some skill on Robinson's part to go so far on the rocks without planting his foot in snow. He at any rate was below; but now Smith was astray and must be recovered. This time Jones went back up the old track, leaving Brown to pursue the errant Robinson. Meanwhile Smith had reached the halting-place of Robinson, had gone beyond it, prowled round it, looked under every big stone in the neighbourhood, but had got no nearer to solving the problem. He shouted with all the force of a stout pair of lungs. According to his own account he kept up a regular series of half-minute guns, but the wind alone knows whither it carried all that sound. What was he to do? He has always declared since that he realised fully Launcelot Gobbo's difficulty. The fiend at his elbow said, 'Use your legs; take the start; run away and overtake the provision knapsack.' Conscience said, 'Launcelot, budge not; two hours at least have to be spent in searching every corner before you can go back.' But whether conscience or the fiend would have won is among those speculations in the pluperfect subjunctive, which furnish the best subjects of debate, because no one can ever be proved wrong, whatever view he takes. Suddenly he heard a shout and hastened towards the sound, expecting to find the lost Robinson just rising into upper air after a snug nap underground. But it was only Jones, who had come back to fetch him, and had gone through an abridged edition of the same process. They had passed each other more than once within a distance of perhaps twenty-five yards; both had been shouting continually. Yet so dense was the mist that they could not see each other; so furious was the gale that only one shout, uttered at the very moment when Jones happened to be exactly to windward of Smith, had reached the ears of the other. It was certainly within the bounds of probability that they might have cruised about, like a pair of Flying Dutchmen, as long as the mist lasted. However the trouble was over at last, and two pair of long legs, with the wind now comfortably astern, made very rapid play downwards until the others were overtaken. Much might be said of the wetness of the corner which Jones selected as a charmingly sheltered spot for lunch, of the goodness of the chicken and ham pie, of the smallness of the tin that contained it, of the soaked state of our coats when at length we got back, and of the soundness of the dinner with which we refreshed ourselves; but cannot these things be filled in from every-one's memory?

Now, if you will be good enough to retranslate my German nomenclature into the vernacular, and discard the tacit assumption which one always makes in talking or reading about mountain expeditions, that they are made in summer, you will find that the locality of our little adventures discloses itself as being the English Lakes in winter, or, to be accurate, in a very snowy March. I might have gone on to record two or three other similar expeditions, one of which at least gave us as magnificent a panorama from Helvellyn as moun-

taineer could desire. I was able to obtain several photographs on that day, some from Helvellyn, and two looking back towards the mountain after we had descended Striding Edge; and if the forms do not rival those of the great peaks, no one would deny to the scenery a genuine Alpine flavour. And this we can have in two or three quarters—in North Wales, in the Lakes, in Western Yorkshire—within a few hours, if we select the right time of year. Such expeditions, being of moderate length and involving no serious number of feet of vertical elevation, are within the compass of a winter day, without the necessity for uncomfortably early starts. And the absence of anything like heat makes climbing, to me at least, incomparably less fatiguing—better suited, perhaps, than Matterhorns or Aiguilles du Géant to the physical capacity of some of us who began to climb the Alps twenty years ago or more. Further, there is a great pleasure in being one's own guide, which in the Alps is limited by one's readiness to carry weight and to cut steps in case of need. There are places on the English mountains in abundance where a fool may break his neck—I use the word as a compendious means of describing those who go on the mountains without experience of their own or of guides, or who possessing the knowledge are too careless to act on it—but there are none where people of moderate skill and judgment may not perfectly well trust to themselves. Nor is bad weather the worst danger, in my opinion, of Alpine climbing without guides, to be dreaded in England. Distances are not great nor slopes excessive. No one with a compass can lose himself; it is difficult to get into a place where one cannot retrace one's steps if further advance is cut off. Nothing short of weather in which no sane man would choose to be out of doors need interfere with those who like walking in bad weather rather than not at all, or cause one any serious doubt of appearing punctually at dinner. That this miniature mountaineering, these Alpicular expeditions (if I may suggest a much-needed word) are as good as the real thing I should be the last even to hint; but are they not a bad substitute. Marmalade is not so nutritious as butter at breakfast, but it makes a change, and is more palatable to some tastes, and after all you can eat both together if you like. Members of the Oxford Alpine Club, who are blessed with two short vacations, are specially able, without prejudice to the summer claims of the High Alps, to enjoy their smaller counterparts.

THE OBERLAND IN APRIL.

By F. T. WETHERED.

Vides, ut alta stet nive candidum
 Soracte, nec jam sustineant onus
 Silvæ laborantes, geluque
 Flumina constiterint acuto.

THE poet of Tibur, when he sat down to the above *alcaic*, was clearly not in love with his mountains in winter. Horace was evidently a chilly mortal, and from his oft-repeated allusions to frost and snow he seems to have dreaded them not a little. Mountain landscapes

present in winter an appearance which must be witnessed to be in any way appreciated. And the different effects of light and shade are of course more noticeable in districts like the Oberland than in valleys, such as that of Zermatt, at a higher level. Deciduous trees are so numerous in the Oberland that when their leaves are cast the foregrounds are affected in a very marked degree. The month of April ranges itself unquestionably, in Alpine parlance, with the 'winter' half of the year. Most of the hôtels are still shut up, the trains are fewer, and the diligences and steamers follow suit. Such an hôtel as the Schweizerhof, at Lucerne, is pretty full with its birds of passage who are homeward-bound after a winter spent in the balmy south; but even the Schweizerhof with its façade of trimmed up and leafless chestnut trees is different from what we most of us recollect it. The *vs inertie* dominated. No touts, few tourists, still fewer red-covered Bädikers were to be seen on the quay as we went on board a steamer for a freshener to Brunnen, after a cold run out from Charing Cross, *via* Laon and Bâle, on April 19 last. Pilatus was stereotyped in the sharpened atmosphere, and looked much more of a mountain than in August or July. Lack of green on the lake shores was fully compensated by the subdued purple on the tiers of beech trees upon the Rigi slopes. The Engelberg ranges looked twice their normal size and were still very deep in snow. But the most beautiful mountain peep of all was in store for us from Brunnen, whence the Bristenstock upreared itself at the end of the Maderanerthal, though it looked much nearer in the rarefied air—a miniature Weisshorn of the best description.

The views from the lake next morning were even clearer than on the previous day as we steamed along its whole length of 27 miles to Flüelen on the way to Andermatt. The St. Gothard Railway took us on to Göschenen, and the walk thence was beautiful in the extreme, although not altogether secure from falling stones. Above the Devil's Bridge the Reuss skimmed down in sparkling torrents underneath fantastic snow caves, and on emerging from the Urnerloch, or Hole of Uri, which opens on to the plain of Andermatt, a gang of navvies shovelled up the débris of an avalanche which had recently come down from above. And then opened out a waste of snow, such as I have never set eyes on for its extent and beauty in the whole of my experience. As an icicle the little village stood up from its ghost-white shroud—an *ultima Thule* beyond description. Two enormous avalanches from the neighbourhood of the Six Madun had fallen ten days before, about midway between Andermatt and Hospenthal, and the whole plain was two feet deep in snow. Sleigh carts fetched hay from point to point. The 'coup de glace' once seen, was to be forgotten, never!

A long drive over the Brunig next day from Alpnach brought us the same evening late to Grindelwald. The sunset on the Mönch from the road between Interlaken and Zweilütschinen was superlatively grand. I had never seen a finer one even in July; the slopes seemed aglow with fire. Night had fairly set in when we reached the village, to find ourselves the only guests at our hôtel. 'We' consisted

of one of my sons and myself; and, as the former had never been on a glacier, next morning we cut up the icefall of the lower Eismeer, in company with Ulrich Almer, towards the Zäsenberg. How that glacier has shrunk since I first saw it in 1862! The surface of the glacier above the icefall was knee-deep and more in snow, and soft. Plunging into it was tiresome work, and eventually we contented ourselves on a friendly rock at the base of the Eiger, a little above the Bäregg chalet.

Next day we went up the Faulhorn. The Wengern Alp was much more deeply set in snow, and the view from the higher eminence was likely to be grand. We ascended by the Buss Alp, a route more interesting than that between the Röthihorn and Schwarzhorn, and perhaps shorter by half an hour. The sun was quite hot by eight o'clock. Shady pine woods led on to grass slopes. Carpets of crocuses, primulas, countless pansies, cardinellas, a few gentians, and white anemones were in flower at different levels. At last a rocky spur led on to a regular arête of snow; and then snow-fields in tolerably firm condition brought us on to an angle of the Simmelihorn, and shortly the summit of the Faulhorn, deep in snow, was reached. The Brienz water, rippled over with cold-looking wavelets, made a pleasing contrast to the vast glare of white by which we had mounted. The Oberland peaks stood out sharp as steel, although the Schreckhorn was unfortunately for the time in a cloud. The route to the east of the Simmelihorn seemed to present a far more laborious appearance than the one by which we had come up, so we gave up the idea of returning by it, as intended. A few glissades and a short floundering in the snow brought us down again to the Buss Alp.

Our stay at Grindelwald was not long. On the 25th the clouds were low, and avalanches shot down in abundance from the Eiger, Wetterhorn, and Männlichen all day. We witnessed an extremely fine one from the latter as we drove round to Lauterbrunnen in an einspanner. Lauterbrunnen looked a bit greener than the higher valley which we had left, but the water in the Staubbach was little. Next day it snowed hard at Grindelwald, and we made a bolt of it to Interlaken. The purple on the beeches was more mellow than a few days before. Alders were already breaking into green. Snow lay powdered on the Scheinige Platte, and altogether the Alps in April as we saw them are likely to be remembered by us for many a year.

IN MEMORIAM.

BERNARD STUDER AND IWAN VON TSCHUDI.

THE list of the honorary members of the Alpine Club is not a very long one, and there are not very many Swiss names on it. It is thus an extraordinary coincidence that within the same week two of that small band should have passed to their rest, Bernard Studer, the veteran Swiss geologist, and Iwan von Tschudi, the writer of the well-known Swiss guide-book.

Bernard Studer was born in 1794, and had thus attained his ninety-third year. His birthplace was Büren (in the Canton of Bern), where his father was the pastor. His father was a man of scientific tastes who, in a letter written in 1783, gave the correct explanation of those curious phenomena known as 'glacier tables,' and in 1815 became one of the founders of the Swiss Scientific Society. Bernard, his third son, inherited those tastes, and devoted himself to the pursuit of natural science. It is stated that he passed all the examinations necessary to qualify him to be a Protestant minister, and though he never took charge of a parish he remained to the end of his life a member of the Bernese pastorate. His scientific education was completed at Göttingen, Freiburg, Berlin, and Paris. On his return home he became (in 1816) Lecturer in Mathematics and Physics at the Academy of Bern, exchanging this post in 1834 for that of Professor of Geology at the newly-founded University of Bern, for it was to geology that he specially devoted himself, and it is by his geological researches that he gained for himself a very honourable position on the roll of Swiss scientific men. His first important work was the 'Monographie der Molasse' (1825), followed in 1834 by the 'Geologie der westlichen Schweizer Alpen,' in 1836 by his 'Lehrbuch der mathematischen Geographie,' to which succeeded in 1844-7 the 'Lehrbuch der physikalischen Geographie und Geologie,' and in 1851-3 his *magnum opus* the 'Geologie der Schweiz' (two volumes). Many minor works and articles serve to prove his indefatigable industry. Of these the latest in date is the 'Index der Petrographie und Stratigraphie' (1872).

His lectures were largely attended, and he is credited with the power of stimulating even faint interest in scientific matters, though he never troubled himself about those who had no leanings that way. His exclusive devotion to science offended many who would have had him take an active share in political and social life. He was in the habit of recommending to his pupils the perusal of Bacon's 'Novum Organon' and De Saussure's 'Voyages dans les Alpes;' for, like those two illustrious men, Studer was not content with sorting facts already accumulated, but collected new facts innumerable. He made countless journeys in the Alps, few parts of which he had not visited (his highest point being the Adler Pass), and he also visited other lands than his own—all for the purposes of examining in person remarkable geological phenomena. A Swiss paper states that even after he was ninety years of age he was so hale and hearty that he crossed several Alpine passes on foot. It is only right to remark that he did not make minute researches in the topography and nomenclature of the Alps. That task he left to his first cousin Gottlieb Studer (the well-known author of 'Ueber Eis und Schnee'), though he allows in his preface to Gottlieb's 'Die Eiswüsten . . . des Cantons Bern' (1844) that such researches open many new ways for geologists and physicists.

We have not yet, however, mentioned what is the most important work of Studer from the Alpine rather than from the purely scientific point of view. In his geological studies he had often felt the want of a good map of Switzerland, and it was mainly at his suggestion that in 1827-30 the Swiss Scientific Society resolved to undertake the

task. The military authorities of the Confederation were consulted as to the best methods of carrying out the work, and in 1832 a Federal Commission met to consider the subject. In the end the Government decided to make the map itself, and in 1836 the Society handed over to it the money it had collected, which largely defrayed the cost of sheet xvii. of the Federal map (Lake of Geneva to the Gemmi), laid before the Society in 1845. It is, therefore, very much to Bernard Studer that we owe the great Dufour and Siegfried maps, which are most justly the pride of Switzerland and have not yet been surpassed in accuracy by the surveys of any other country. Studer's original plan resulted in the geological map of Switzerland, which he published (1853) in conjunction with his friend A. Escher von der Linth. After the appearance of the Dufour map the State appointed a Commission, of which Studer was the head, for the purpose of compiling a new geological map on the basis and scale of that great map. The first sheet appeared in 1862, but Studer has not lived to see the publication of the last of the twenty-five sheets, though he superintended its execution and had contributed largely to the stately row of twenty-seven quartos in which the labours of the Commission are embodied.

In 1863 he published his '*Geschichte der physischen Geographie der Schweiz bis 1815*,' which is the indispensable companion of anyone working at any question of the history of Swiss topography, and is a marvellously full and very accurate compendium of information. By it and by the stimulus he gave to the surveys for the great Swiss maps Studer has deserved well of all mountaineers, quite apart from his merits as a man of science. These merits were widely recognised and acknowledged at home and abroad. He received from the Geological Society of London the highest honours it can bestow, being elected a 'foreign member' in 1850 and in 1879 being awarded the Wollaston medal. He was also a Knight of the Prussian Order '*Pour le Mérite*.'

Studer's name occurs frequently in the *Life of Principal J. D. Forbes* (London, 1873), whom he visited in Scotland (1847), and for whom he had a great esteem. They met at the Grimsel in 1841, just before Forbes's ascent of the Jungfrau, and in 1842 they crossed together the Col de la Fenêtre from the Val de Bagnes to the Valpelline, and the Col de Collon to Evolena. Unluckily Studer suffered so much from the bad accommodation at Evolena that he went round to Zermatt by the valley, leaving Forbes to cross the Col d'Hérens. Studer and Forbes frequently corresponded, and Studer warmly supported his Scotch friend in the controversy as to the priority of Forbes and Rendu in discovering the 'viscous theory' of glacier motion. He says in a letter to Forbes, written in 1860, '*Je n'oublierai jamais l'impression que me fit l'annonce de cette importante découverte.*'* Studer's name is mentioned frequently with respect in M. Desor's section on the Geology of the Alps in the introduction to Mr. Ball's '*Alpine Guide*,' and some years ago he was elected an honorary member of the Alpine Club.

He died at Bern on May 2 last, of sheer old age, after a quiet and

* *Life of Forbes*, p. 496.

peaceful life devoted to the promotion of the scientific knowledge of his native land, honoured and respected by all, a worthy representative of a family highly distinguished in the literary annals of Switzerland. Probably no one has ever had a more complete and accurate knowledge of the geology of the Alps, gained largely, be it remembered, from his own personal experience in his repeated journeys. Long ago M. Agassiz emphasised this fact by giving Studer's name to a lofty pass in the Bernese Oberland.

Iwan von Tschudi, who died on April 28, contributed in his way nearly as much to the knowledge of the Swiss Alps as Bernard Studer. He was a member of the great Glarus family, so distinguished in Swiss history and literature, and was born in 1816. He was educated for a manufacturer's career, but spent all his holidays and leisure in excursions amongst the higher ranges of his native land. Later he devoted himself to the study of chemistry and drawing in Mulhouse and Paris, in the latter place making the acquaintance of the poet Heine. After a sojourn in Russia and extended travels all over Europe he undertook in 1846, in concert with his brother-in-law, the business of a publisher and printer at St. Gall. The firm was dissolved in 1868, since which time Tschudi restricted his energy to the sale of books and the publication of his Swiss Guide Book. His patriotism and love of nature led him to make personal acquaintance with every corner of Switzerland, particularly the Swiss Alps. He allowed himself that he was not so much a 'Gipfeljäger' as an explorer and one who undertook the task of making known the doings of others. He felt the want of a good Swiss guide book, and was finally led to compile one. This appeared in 1855 under the title of 'Schweizerführer,' in a very modest shape. It rapidly succeeded. In 1872 it was remodelled and received the name of 'Der Tourist in der Schweiz;' the twenty-ninth edition was published a few days only after his death, and a notice of it will be found in another part of the present number. The main features of the book have always been its concise but clear and, as a rule, very accurate notes of every ascent and pass made in the Swiss Alps and in the neighbouring ranges. It thus serves as an admirable index to the latest doings of climbers in the Central Alps, and was always most carefully posted up to date. English climbers may criticise the 'times' allowed for certain expeditions and the estimate of difficulties; but the great merits of the book must be allowed, though it was perhaps less known than it ought to have been, as it appeared in German only. Years ago it was spoken of in these pages as 'the best pocket guide-book for mountaineers,' and that character it has always maintained. He was indefatigable in making journeys to see for himself the changes made in consequence of the increasing number of visitors to Switzerland, and contrived to sort and arrange the enormous materials at his disposal in a really remarkable way. He was always ready to receive and adopt corrections which were sent to him by most of the active climbers and explorers of the day. Some sections of the book were published in an enlarged form, but do not seem to have attained so great success as the original work.

It is by his Swiss Guide Book that Iwan von Tschudi made himself

an honoured name, and it was as the author of such a book that in 1879 he received the honour of being elected an honorary member of the Alpine Club, an honour which he highly prized and mentioned on the title page of the 'Turist.'

When the much-needed revision of Mr. Ball's 'Alpine Guide'—the delay in undertaking which is scarcely a credit to English mountaineers—takes place Tschudi's book will be found of the greatest use, for in it an enormous mass of valuable material is sorted and assimilated. In fact, it is at present the only rival of Mr. Ball's 'Guide' so far as regards the Swiss mountains, and it takes in the Swiss plains too, for it is a distinctly national work and only partly follows Mr. Ball's book in subordinating national to natural considerations. As a guide to the Swiss Alps it is all but unrivalled, and it makes no claim to be a guide to the whole Alpine chain. Mr. Ball's book does make such a claim, and is abundantly justified in making it, though it sadly wants to be revised in detail and brought up to the level of recent explorations in the Alps.

THE ALPINE COURT AT THE LIVERPOOL JUBILEE EXHIBITION.

FROM time to time we are reminded that the mountains are capable of affording something more than mere gymnastic exercise and amusement, and we recognise as a novelty that which some few have all along in their mountaineering career borne in mind—namely, that scientific exploration and mountain climbing may go hand in hand, or, to put it more appropriately, that the scientist and the climber may most fitly be united on the same rope. A fresh proof of this condition of things was afforded by the fact, that when the idea of including in the Liverpool Exhibition some exploration courts took shape, it was decided that one court should be devoted to Alpine exhibits. In the words of the Official Guide, 'In this department (exploration courts) four special sections typify, by panoramic and realistic effects, Alpine, Tropical, and Arctic exploration; while the exhibits which occupy the remaining space of the courts are an introduction to objects of interest collected from all parts of the world in which exploration has been initiated or advanced during her Majesty's reign.' Although very short notice was given, the Alpine Court proves a decided success, a result eminently due to the energy of the Commissioner, Mr. J. Godfrey Thrupp, and the labours of the Local Committee, Messrs. Charles Pilkington, F. Gardiner, W. M. Conway, and Horace Walker. From the first it was felt that the main feature of the court should consist in a collection of Alpine paintings, and it is satisfactory to be able to record that the show is a very fairly representative one. The end of the court is filled in by a large panoramic view of the mountain chain as seen from the slopes of the Riffelberg, extending from the Matterhorn to the Weisshorn. No great attempt has been made to give the local colour, but yet the panorama is exceedingly effective and

correct, and reflects high credit on the artist, Mr. Croshaw Johnson. A realistic foreground built up of stone and shale, and with a group of two chamois at one side cleverly worked in, adds much to the effect. Alpine purists disposed to cavil at the presence of the chamois, and inclined to consider them as much out of place as the traditional frog in Regent Street, may be consoled by the reflection that there was a time when such a phenomenon might actually have been witnessed on these much-frequented regions. The mountains have been less changed by the invading swarms of tourists crawling over and scratching their surfaces than these pigmies suppose, and the majesty of Nature triumphs without an effort over the vulgarity of man. To descend again to prose, much credit is due to all concerned for the skill and taste shown in making effective what might easily have been made ridiculous.

No collection of representations of Alpine scenery could possibly be complete without some of Mr. Donkin's photographs, and a few specimens of his artistically chosen subjects are shown, but are rather unfavourably hung. M. Loppé contributes some recent work, and the Alpine Club exhibits two of his well-known earlier pictures—namely, the view 'from the Dôme du Gouté looking east,' and the 'Mürjelen Sée.' Of M. Loppé's new work, the 'Mer de Glace, Chamonix,' is the best example, and shows that his hand has not lost its cunning in the modelling of glacier ice and the treatment of large masses of white. Interesting too are No. 3, a view of the 'Crater of Mount Etna,' and No. 5, 'Loch Coruisk, Isle of Skye,' the point of view in the latter not very happily chosen, but representing very faithfully the characteristics of the weird scenery. Mr. Arthur Croft, always well to the fore, contributes several paintings, the most prominent of which are two of his largest works—the 'Neue Brücke' and the 'Chapel at Saas Fée,' both of which, if we remember aright, have been seen at the Royal Academy Exhibition, and also at the Club winter exhibitions. Both drawings are remarkable; but, notwithstanding their vast size, the pictures do not impress quite as much as they should. The effort makes itself felt, and the art peeps out here and there. In both alike the composition is marred by the over-elaboration of the foreground, and the mountain summits behind do not seem to take their proper place. The details of the bridge and of the group thronging outside the chapel are painted as solidly as if in oil, while on the other hand the mountains behind seem but as transparent shadows. We have a right to complain whenever Mr. Croft departs in the least from his pure methods, and in a single picture effects such as are best rendered in oils quarrel with effects best given in water colour, and refuse to mingle in harmony even as oil and water refuse to mix. No artist has ever rendered so truthfully the effects of mist clinging and wreathing round the mountains and filling the valleys, for Mr. Croft has always painted his clouds and mist for their own beauties, and not dragged them in to blot out a difficulty or manipulated them to give the effect of height or depth; but in these large works he is not seen at his best, even in the sky. In a word, the pictures are a little too ambitious even for Mr. Croft. Still they excite interest and compel admiration, even though they provoke criticism; and will probably be

justly regarded as the most important works shown, not merely on account of their size, but from their intrinsic merits. One of the most noteworthy works in the whole exhibition, and showing the artist at his very best, is an evening view of the Chamonix Valley from the way up to the Pierre Pointue, painted by Mr. Garrett Smith, and lent by Mr. Horace Walker. Though a comparatively small work, an extraordinary effect of distance has been secured, while the tone of the glacier in the foreground, of the distant mountains and of the sky left nothing to be desired. It is to be hoped that this picture may be seen again at one of the Club winter exhibitions. Mr. Alfred Williams is well represented, the colours of the ice in a study of a large crevasse (No. 23), and again in a little ice-girt lake on the Glacier du Géant (No. 16), being especially noteworthy, for truth and delicacy. Mr. Willink shows his marked individuality in every one of his five contributions; the attitudes and drawing of the figures in Nos. 26 and 28 are marvellously graphic. In the latter work, representing a party descending from the summit of the Wetterhorn in soft snow, the colours of the shadows are wonderfully truthful, especially in the broken cornice. Mr. Willink has struck out an altogether new line in Alpine painting, and one that we trust he will continue to work. Hitherto no artist has really attempted to depict episodes of mountaineering, and such work cannot fail to have something more than interest for a large circle. Among the sixteen pictures exhibited by Mr. B. J. M. Donne, many of which however are unfinished, some good work is to be seen. Best of all are two studies called respectively 'Evening in the Val Anzasca' and 'View in the Marshes of Villeneuve.' In all the works (mostly sub-Alpine) there is a freshness of treatment that carries its own charm. Amateurs who carry their sketch-books to the Alps may learn a useful lesson from Mr. Donne, and perhaps discover that there are other subjects for their pencil besides those which are utterly hackneyed, and repeated *ad nauseam*. We are not in accordance with those who consider the Alps 'unpaintable' by those who study them. Meanwhile the number of subjects to be found on every mountain path at every turn that are perfectly paintable is absolutely infinite; but the amateur will work on the same principle that the American travels, and will not look and choose for himself. The artist who seeks to paint the Alps must take the trouble to learn the anatomy of the mountains and glaciers, even as the figure painter must learn the anatomy of the human form, or else he will commit ridiculous blunders. Even under the School Board system a child who has just learned to 'do' pot-hooks and hangers is not set to write an essay.

The veteran Mr. George Barnard is represented by three of his earlier works, all excellent specimens of his art, and it is satisfactory to see one who has done as much for Alpine art as the founders of the Club did for Alpine climbing, hold his own so well. A series of studies of Alpine flora by Miss Bradley evidences careful labour, but the arrangement of the flowers leaves something to be desired, being stiff and formal. Signor Micocci exhibits some studies, which were recently on view at the Club rooms. The work is rather crude but displays

promise. It only remains to be added that the pictures generally are well arranged, and that the light is good.

The remainder of the exhibits, comprising Alpine equipment and an interesting series of mountain-tops, collected and exhibited by Mr. Gardiner, calls for no special comment. The limited time at the disposal of the Committee unfortunately precluded any attempt to bring together objects of historical interest in connection with mountain exploration. Such a collection would, however, it must be admitted, have proved of more interest to mountaineers than to the general public, and the exhibition was framed rather to attract the latter. Still such a collection we hope to see one day. C. D.

REVIEWS AND NOTICES.

Register zu den Publicationen des Deutschen u. Oesterreichischen Alpenvereins, 1863-86. Von Th. Trautwein. (Munich: Lindauer, 1887. 44 pages. 1s.)

IN 1877 the German and Austrian Alpine Club published an index to the contents of the periodicals issued up to 1877 by that society and the two earlier societies which in 1873 were fused to form it. This extended to twenty-eight pages. The new edition (also due to the patience of Herr Trautwein) goes down to the end of 1886 and extends to forty-four pages. The four main divisions are, as before, Science (eleven pages), 'Touristisches' (twenty-two pages), Club matters (three pages), and maps, views, &c. (seven pages). The first of these has been treated in a very elaborate way, comprising no fewer than fifteen different heads. The second is the one most interesting to climbers, the peaks and passes being arranged under their districts, which are mostly in the Eastern Alps, the 'foreign districts' only taking up two pages. It will be very useful to anyone wishing to know the exact state of exploration in the Eastern Alps. A word or two might, however, have been added to explain the principle on which the different sub-groups have been formed. By an amusing slip the Grand Combin is reckoned among the *Italian Alps*, though it is of course wholly in Switzerland. The array of illustrations and maps is a stately one. We note that there is no attempt to give an alphabetical list either of travellers or guides, a work of infinite trouble and infinitesimal value. The peaks are more important in Alpine literature than their conquerors, for they remain and the others pass away. Time alone will show whether the index is accurate, as it should be, but we welcome it at once as a most useful key to an important department of Alpine literature. This index is far less elaborate than those published by the Italian and Swiss Clubs, or, we may be permitted to say, than that (now in preparation) to the publications of the Alpine Club. For many reasons it is to be regretted that a uniform plan was not drawn out and adopted by the different Clubs; but that was probably impossible in the case of first attempts at indexes such as these, though we may hope that in days to come an international commission may be formed to lay down general principles and to ensure that they are acted on with some approach to uniformity.

Lieder-Buch des Deutschen und Oesterreichischen Alpen-Vereins. Von J. Bletzacher. (Hanover: A. Nagel, 1887. 4 francs.)

We often hear it said that Englishmen are by nature unmusical. However this may be in general it is certainly true in the matter of Alpine music and song. No doubt there are exceptions. Our thoughts fly at once to Mr. Leslie Stephen's amusing description of how the final slope of the Viescherjoch was won to and by means of the strains of a Welsh ballad sung by a Welsh member of his party, and there may be a few other cases. But these exceptions only serve to prove the general rule. Abroad matters are different. Guides are fond of singing, often at very inconvenient hours, and no one can have travelled with foreign climbers or attended a congress of one of the foreign Alpine Clubs without noticing the prominence of singing in the programme. It is no doubt for this latter reason that a book of Alpine songs has been compiled by Herr Bletzacher, who is, as his title-page informs us, a member of the Royal Prussian Opera Company. His collection includes eighty songs and ballads, with accompanying music, in part expressly composed for the book. In an appendix are twenty-one more, without music. Doubtless both words and airs will suit those for whom they are intended, but we do not venture to criticise them as being one of those to whom the musical sense is generally denied. However we may say this much, that in many cases the words are very inspiring, though we miss any song expressly meant for celebrating a first ascent. Many of the number are popular ballads having little to do with the Alps. It is a pity too that some of the best known Swiss songs were not included. We have 'Andreas Hofer,' and we long for the 'Rütli,' while 'Heil dir im Siegerkranz' might well find a mate in 'Ruffst du mein Vaterland?' The rhymed version of the regulations for a Club hut (No. 10 in the appendix) is amusing, and the comparative absence of hunters' songs is striking. The get-up of the book is good, and it is of a very convenient shape for the pocket. It no doubt supplies a want, and will be very popular, in which case the non-musical Englishman may perhaps be converted in the course of his Alpine wanderings this summer; and who knows whether in that case we may not presently have to review a similar book of English origin?

Der Tourist in der Schweiz. Von I. von Tschudi. 29th edition. (St. Gall, 1887. 10s.)

A few days only after the death of its author the last edition of his guide book was published, which will be personally revised by one who knew and loved his fatherland so well, though it is hoped that the decease of Herr von Tschudi will not entail the decease of his guide book. We have so often spoken of former editions, and have expressed ourselves so strongly in its favour, that we may content ourselves this time with saying that it has been thoroughly brought up to date, and that even the new expeditions of 1886, chronicled in our pages, are mentioned in their proper places. For compactness, for accuracy, and for the latest information there is no Swiss guide book better adapted for mountaineers who wish to know the exact state of exploration

in any group of the Swiss Alps or of the ranges in their immediate neighbourhood. Full accounts of the routes (as in Ball) will not be found; but the general indications given are sufficient for all but specialists, and will, indeed, help to create specialists by showing how much remains to be done even in the central ranges of the Swiss Alps. The minute exploration of the Alps is still in its infancy, and those who best know the Alps will be the first to admit this statement—at first sight a rather startling one.

Walliser und Walsler : eine Deutsche Sprachverschiebung in den Alpen. Von Julius Studer. (Zürich : F. Schulthess, 1886.)

Deutsche Sprachinseln in Wälschtirol : landschaftliche und geschichtliche Schilderungen. Von Hans Leck. (Stuttgart : K. Aue, 1884.)

These two pamphlets treat of a similar subject—German-speaking villages isolated in a Romance-speaking land. But these villages had a very different origin in the two cases. In the first case they are German colonies settled in a foreign land; in the other, the remnants of the old German settlers who once occupied nearly the whole of the South Tyrol.

Herr Studer's booklet treats of an extremely interesting subject—the settlements of colonies from the Valais (whither the German settlers had come from Hasli in the thirteenth century) in the lands north, south, and east of their original home. He first takes those villages in the valleys around the foot of Monte Rosa, politically Italian, linguistically German, and German of the Valais dialect. He fully acknowledges his obligations to the classical work of Schott ('Die Deutschen Colonien in Piemont,' Stuttgart, 1842), the general argument of which he accepts. Many original documents have, however, been published since 1842, and by the aid of them Herr Studer is able to construct an outline of the early history of the valleys of Macugnaga, Alagna, and Gressoney, in which it is shown that the German settlements at the head of these glens came from the Valais through the connection of the lords of these districts with the Valais, and took place at the end of the twelfth and in the course of the thirteenth centuries. The whole section is most interesting and will give much new information to those who have hitherto thought of these valleys rather as centres for ascents than as possessing a very curious local history. Two striking items are the facts that the upper course of the Anza stream, in the Macugnaga valley, is still locally called the 'Visp,' while in the Alagna valley it was formerly the custom to act Passion Plays in German, all the actors (save the representatives of the Devil and of the executioners) coming to church before the performance began and receiving the benediction of the priest. Herr Studer then passes on to the German colonies south of the Simplon (e.g. Sempeln, Gsteig or Algaby, Ruden or Gondo, and Zwischbergen), which belong to the Confederation; but far more interesting is his brief notice of Urnäsch or Ornavasso, in the Val d'Ossola, where German has disappeared save in a few local names (il Dorf, il Bach), but where the tradition of its colonisation from the hamlet of Naters, near Brieg (which is perfectly

certain and took place some time between 1275 and 1307), lingered on as late as 1871, when the men of Ornavasso, now thoroughly Italian, named one of their streets 'Via Naters' in remembrance of the old connection. Then we come to the Germans in the Pommatthal, or Val Formazza, and especially at the little hamlet of Gurin or Bosco, in Val Caverghna (still Swiss). At the last place widows with a certain amount of property voted with the men in the election of representatives as late as 1740.

All these settlements were made by men coming from the Valais; and these penetrated to the north also, making themselves homes in the valleys of the Kander, Lauterbrunnen, Grindelwald, and Meiringen, the Lötschen pass and the Grimsel offering easy roads. It is undoubtedly to some such settlement that the tales must be referred of men from the Valais coming across the glaciers to have their children baptised at Grindelwald; it was simply the Valaisan settlers at Grindelwald who brought their children to the parish church of their adopted home. Herr Studer then turns to those German settlers in Romance-speaking lands often known as 'Walser,' a distorted form of 'Walliser,' for these too came from the Valais and obtained special rights and privileges. Their chief centre seems to have been Davos (the famous air-cure place), which was granted by a document of 1289 to certain colonists from the Upper Valais; thence they spread in all directions—Aversthal, Valsertal, Hinterrhein, Splügen, Prättigau, Lichtenstein, and Vorarlberg. In many cases they can be traced as having directly come from Davos. One of the proofs of these facts cited by Herr Studer is that there are in those parts many churches dedicated to St. Theodul (the Bishop of Sion and the patron of the Valais), that this dedication occurs only in the case of the 'Walser' villages, and that his feast on August 16 is still kept there, sometimes (as at Triesen) in ignorance of the real reason why it is so kept. This is an interesting line of investigation, which in England has been followed with considerable success by Mr. Thomas Kerlake, of Bristol, with the object of ascertaining the exact limits between the conquered Britons and the conquering English towards Cornwall and Wales, and which can be recommended as very sure and yet beyond the chance of wilful falsification.

According to Herr Studer's estimate the German-speaking population in the valleys around Monte Rosa (including the Val Formazza) amounts at present to about 8,000 souls; but though in some cases (especially Gressoney, Macugnaga, and Val Formazza) German holds its ground, Italian is, as a rule, gaining on it, and will do so in the future through the schools, as in the case of English and Welsh in Wales. The German population in the Graubünden, &c., amounts to 7,000 or 8,000 souls. Here German is maintaining itself well, and even increasing.

We heartily thank Herr Studer (who must not be confounded with his better known namesakes) for a very interesting and valuable contribution to Alpine history. The pamphlet contains nothing absolutely new in itself, but gathers together and focusses bits of information from many sources, so as to present a picture of the remarkable migrations

which had their rise in the Valais, originally inhabited by a race partly Keltic and partly Burgundian, and later Teutonised.*

Herr Leck's work is more directly polemical than Herr Studer's, for it is written in the interest of the 'Deutscher Schulverein' in Vienna, a society which, through the schools, is striving to maintain the use of German in certain parts of South Tyrol, which, though historically connected with the Sette Comuni, are politically Austrian, while these latter form part of the kingdom of Italy. Herr Leck describes very pleasantly his visit in 1883 to those three German-speaking islands just E. of Trent, surrounded on all sides but one by a Romance sea—the Fersenthal or Val Fersina (where German is spoken in the villages on the left bank of the stream and Italian by those on the other side), Luserna and St. Sebastian, both on the borders of the territory of the Sette Comuni. Their general appearance and that of the inhabitants, as well as the occupations of the latter, seem to be very much like those of any other Alpine valley, though Herr Leck apparently considers them more or less singular and remarkable. He decidedly, and rightly, rejects the theory that these settlements (and those of the Sette Comuni) are of Keltic origin. They are certainly German, but it is bold to fix the precise date at which they took place. Herr Leck is of opinion that they may have begun as early as the defeat of the Alemanni by Clovis in 496, who were received and protected by Theodoric, the Ostrogothic king, and were probably continued gradually in Carolingian and later times. He is inclined to think that in the Fersenthal (where the inhabitants are known as Mocheni, a name of uncertain origin) the Bavarian dialect prevails, while Alemannian and Bavarian are side by side in Luserna and at St. Sebastian, Alemannian coming to the front particularly in the Sette Comuni. Herr Leck also appends a map, from which it would appear that in long-past ages all the South Tyrol south of Botzen, and extending from Pinzolo to Primiero, was occupied by Germans, the names being carefully given and the result being really amazing. Probably, however, these small settlements were gradually swallowed up in the great majority of non-German-speaking colonists ever coming up from the Lombard plain.

Both pamphlets are worth reading by all who care about the history of the Alpine lands as well as their physical features.

Die Gemse: ein monografischer Beitrag zur Jagdzooologie. Von F. C. Keller.
(Klagenfurt: Joh. Leon, 1887. 12s.)

The author of this book has a reputation as a sportsman and zoologist that extends a good deal beyond his own district. In addition, he knows how to write—a further qualification not always considered necessary by authors who fall to bookmaking. The work professes to be a monograph on the chamois, and certainly appears to fulfil its promise. No doubt a certain amount of redundant matter is contained

* Probably the 'Theutonici' whom we find established in the Val Orsine in 1264 and 1285 (according to documents in the Chamonix cartulary) were also emigrants from the Valais, like those of the same race in the valleys of Sixt and Abondance. The Valais in the thirteenth century seems verily to have been an 'officina gentium.'

in the five hundred odd pages before us. Books dealing with any form of sport are nearly always too wordy, the authors treating them, like they do their trophies of the chase, to a good deal of stuffing. Herr Keller's stories, however, are so well told, and show everywhere such keen enthusiasm for sport, that we can readily forgive him. Of a truth, if the chamois, as seems only too probable, is before many years to be hunted off the face of the earth, this work will form a fitting monument to its memory. The work is of high merit, from a scientific point of view, and teems with information on points of natural history. To those who have formed their ideas principally of the nature and habits of the 'Capella rupicapra' from the specimens preserved for the delectation of tourists and the profits of hotel-keepers, or the wood carvings in Swiss shops, this work may be a little disappointing, for hard science certainly trims off a little of the romance. Thus on p. 8, where the author speaks of the size to which the animal may attain, we come across no mention of such phenomenal giants as every guide is able—and very willing—to describe from his own experience. Neither, according to Herr Keller, is the natural term of the chamois' life so long as is generally supposed, not exceeding, in his opinion, twenty or twenty-five years (p. 50). There seems to be a popular idea that the age of a chamois can be told, on the same principle as that of a tree, by the number of marks on its horns. Remarkable results can easily be obtained by a manipulation of figures founded on a mistaken assumption. Unfortunately, this method of arriving at the fact that chamois live to a patriarchal age is demolished at once by Herr Keller, who explains clearly the mode of growth of the horns. But if the scientific part of the work disabuses our minds of some cherished traditions, certain of the stories—shall we say 'yarns'?—which the author reproduces lead us to the conclusion that the chamois hunter is, after all, but mortal, even as the angler or the man who shoots driven grouse, and that chamois 'shop' is a conversational exercise which has the merit of making demands upon the imagination; so at least we infer from a perusal of chapter ii. and other parts of the book.

The curious fact that chamois are frequently affected by snow-blindness is well established by the author (pp. 14 and 127). This generally occurs in the spring after a fresh fall of snow, and we judge from the author's remarks that the disease usually takes the more serious form, affecting the deeper parts of the eye. On the mountain-climbing powers of the animal the remarks of the author are full of interest. It is not unnatural that popular superstition should give it credit for almost supernatural capabilities in this direction. The author cites an instance from his own observation (p. 78) where a chamois leapt from a height of 120 feet on to a rock, and was able to escape apparently unhurt; such a result after a fall from this height is less marvellous when we consider that the animal would probably land on all four feet, and that owing to the inclination of the arm and thigh bones the force of the impact is very much broken up. If a man were to jump from a height of only a few feet and land on his heels with his legs outstretched, he would probably fracture the base of his skull, for here the force of the impact would be transmitted directly up through the spinal column. Still, as the

author mentions elsewhere, it is no uncommon occurrence to find chamois that have been killed by falls from inconsiderable heights, a fact from which mountaineers may derive what consolation they can. A very curious and interesting chapter is devoted to the abnormalities and diseases to which the chamois is liable; one remarkable specimen is figured having no less than six horns, all well formed, an apparition which might have recalled Hubert himself to his neglected duties as effectively as the more mythical monstrosity referred to in the legend.

The reader will probably be surprised somewhat at learning of the extensive distribution of the chamois as shown on pp. 173 *et seq.* Having set forth with great minuteness all details of the natural history and habits of the chamois, the author proceeds to elaborate instructions as to how he may best be destroyed. Here the didactic tone fitting to a scientific treatise is a little dropped, and the ardent sportsman makes himself felt in every line. The enthusiasm, indeed, is evidenced in print by notes of exclamation rather profusely scattered about, some of which might have been appended with more meaning to certain of the stories. A few hints on mountaineering proper are contained in this part of the work, and will be found on p. 375 and elsewhere. As a means of allaying thirst when walking, the author recommends smoking. It is probable that the undoubted relief to thirst derived from smoking is brought about in two ways: one that the mountaineer keeps his mouth shut, and the other that the act of sucking leads to secretion of saliva. *Pace* Herr Keller, therefore, we are disposed to think that the best effect would be produced when the cigar is held in the mouth and not lighted, for a stream of hot smoke can but tend to dry the mucous membrane, and mountain thirst is more often due to a local dryness of the mouth and throat than to a general craving for liquid. Crampons, as might be supposed, are recommended, for the author's hunting ground has chiefly been in Carinthia. We are glad to notice that Herr Keller speaks decidedly against the employment of that most unsportsmanlike refinement, the explosive bullet (p. 325). Although a chapter is devoted to hunting with dogs, the author has not much to say in favour of the method, and prefers the excitement of the drive. A chamois drive is not like a grouse drive. To some extent the two systems may be compared to battue shooting and shooting partridges or grouse over dogs, the latter constituting a form of sport it is hard to beat. It is for those who wish to indulge in chamois hunting to consider which is most in accordance with sporting morals. The life of a beast so persecuted as the chamois cannot be one of unmixed delight, and it is satisfactory to learn that they have their moments of pleasure and innocent enjoyment. Thus Herr Keller describes how on one occasion he saw a number of chamois glissading down a snow slope apparently for the fun of the thing, for when they reached the bottom they climbed up again to renew the exercise. The subject would have been worthy the pencil of Ernest Griset. To the inexperienced mountaineer it may be a satisfaction to know that one of the young ones engaged in this diversion lost its footing and went flying head over heels. No doubt it performed this escapade merely for the

delectation of the rest of the party, as usually is the case, according to his own account, with the biped overtaken by a similar disaster.

It remains only to be added that in binding, type, and get up the work is thoroughly admirable. Some appendices contain a quantity of useful information to the sportsman, including a glossary of technical terms, from which it appears that the chamois hunter has almost a complete language of his own. One serious omission, however, is to be noticed—there is no index.

To those who seek to distinguish themselves in the mountain fields of this fascinating sport we can most confidently recommend this work as complete, reliable and sound. The illustrations, too, are much above the average, while from first to last the book is eminently readable. C. D.

Panorama du Massif de l'Oisans, d'après une photographie prise du sommet de la Barre des Ecrins. Par J. Mathieu. (Lyons.)

Why is it that pictures of the Alps and illustrations to Alpine books are as a rule so inaccurate and unlike the reality? There are a few—very few—exceptions, and these are not always well known or popular. No doubt the early Alpine artists were overpowered by their subject, and had no scale by which to arrive at a right estimate of the proportions of the great peaks. Their successors were free from this drawback, but have been inclined to paint and draw the ideal rather than the real, the result being the delight of those who do not know the great mountains and the despair of those who do. Similarly in the case of illustrations to books. The early sketches were too vague, the later too picturesque, while the improvement of the processes of reproduction has not entirely removed these faults. The only answer to our question which we have ever received is that artists are not bound to be accurate, but only to convey to others their impressions of the scenes they profess to reproduce. This may be true from the professional point of view, but it will not satisfy those who desire exact representations of their summer friends, whether for the purpose of recalling pleasant recollections or for topographical investigations. These will betake themselves to men who do not aim at making a picture, but at reproducing as exactly as possible the forms of the great peaks. Mr. Donkin's photographs are perhaps the only case in which accuracy and picturesque treatment are found in combination. The numberless panoramas by Herr Gottlieb Studer, following in his father's footsteps, and by other Swiss draughtsmen, are, for the mountaineer, of infinitely greater value than pretty pictures, though it must be confessed that these panoramas not seldom lack artistic merit. But then it must be remembered that they lay no claim to it. The fashion of panoramas started with views of mountains from the towns. These views of the higher mountains were taken from lower peaks, such as the Buet, Faulhorn, &c. Now we have panoramas taken from the higher peaks, such as those of Mr. Donkin from the Weisshorn and of Signor Sella from the Matterhorn and Grand Paradis. It is to this latter class that M. Mathieu's panorama from the Ecrins belongs. In many ways the Ecrins deserved such a compliment. Not only is it the highest point of its district, and very nearly as lofty as the Mönch

or the Aiguille Verte, but it stands in the centre of a group of which the other points are of sufficient height not to appear dwarfed when looked at from above, while the topographical value of such a view is very great, certain sides and slopes being seen here in quite a new aspect. M. Mathieu was very lucky in having selected a day which was perfectly clear, such as was July 16, 1885, in Dauphiné, and consequently his photograph had everything in its favour. It has now been reproduced and circulated at the expense of the active Lyons section of the French Alpine Club, and forms a roll which is no less than five feet and a half long when spread out. It is a most interesting document, and one which will be prized by all its possessors. The reproduction, however, is rather rough and coarse; and no care has been taken to bring out clearly the mountains beyond the Pelvoux group. Hence its interest is largely local, and in some ways this makes it all the more valuable. It is one more sign—if any were required—that French climbers (amongst whom M. Mathieu holds a very honourable place) are devoting themselves to the exploration of the French Alps, so long neglected save by a few foreigners. The Dauphiné, though not widely known in Alpine circles, is well known by all those who have been there, for it attracts again and again all lovers of nature who abhor Cook's tourists, and still more the fashionable and crowded mountaineering centres where climbing is but an incident, and a comparatively unimportant incident, in the day's programme.

Die Gebirgsgruppe des Monte Cristallo. Von W. Eckerth. (Prague: H. Dominicus, 1887. 8vo., 35 pages. 1s. 6d.)

This is a very satisfactory monograph on the Cristallo group, near Cortina. Dr. Eckerth has, as all frequent visitors of Schludersbach know, been engaged for many years in the exploration of the Cristallo, and in this pamphlet he gives to the world the result of his researches.

The first and main part of the booklet is devoted to the topography of the group, and is very well done; but the second part, relating to the ascents made therein, is more open to criticism, for five ascents only are described, and the narratives are not written with the care and pains which we observe in the topographical portion of the work. The history of the early ascents is a mere outline, and we miss especially a bibliography of the literature relating to the Cristallo, a feature which ought to occupy a prominent position in a monograph. Climbers, however, will be thankful for the list of the unascended points—even though they are of small importance—in the district. The map appended to the book is simply a reproduction of the Austrian Specialkarte, though the author might well have corrected on his map the faults of the original which he points out in his text.

It is much to be desired that every group in the Dolomites should be made the subject of a monograph like Herr Eckerth's, which we can warmly recommend despite the blemishes we have pointed out. It is even more to be desired that a good map of the Dolomites should be made, for the want of it is much felt by all who visit the district.

A. LORRIA.

Die Schweiz. Von J. J. Egli. (Leipzig: G. Freytag, 1886. 1s.)

This book of 200 pages forms part of a popular series of handbooks, and is intended to give a general outline account of Switzerland as it actually is, not only as the playground of Europe, but in its historical, economical, social, and political aspects. It seems to us very well done, though of course the space given to each department is very limited; *e.g.* in the history section the battle of Sempach is not mentioned. Nearly fifty illustrations are to be found in the book, and, despite its marvellous cheapness, they are very well done and well chosen. The print and paper are good, and we can recommend Dr. Egli's carefully-written pamphlet (for it is scarcely more) to all who wish to gain a general idea of Switzerland and the Swiss people. Its perusal will show that the 'Fremdenindustrie' is not everything in Switzerland, and that its institutions and politics are quite as well worth study as its peaks and passes.

Alpwirtschaftliche Volksschriften. Von R. Schatzmann. (Aarau: Witz-Christen, 1887. New and cheap edition. 2 vols. 3 francs.)

Club huts, no doubt, do away, to a certain extent, with the necessity of sleeping in the cheese-makers' huts on the 'alps,' but for many expeditions we must still resort to the latter. Now it is beyond doubt that a very great number of those who have sought, or do seek, hospitality from the herdsmen are English, while probably few of them have ever cared to enquire into the subject of the management of the 'alps' and the making of cheese. Yet the subject is one of very great historical and economical interest, dating back to far past ages and dealing with an important side of the industry of a pastoral country. Swiss herdsmen, and Swiss cheese-makers too, are found in all parts of the great Alpine range, and hence if we gain a clear idea of the way in which a Swiss 'alp' is managed we may apply our knowledge to non-Swiss districts (save in a few unimportant particulars). In the work before us the author endeavours to give a popular account of the mountain pasturages. Though meant primarily for the practical purpose of improving the methods commonly employed, the simple enquirer may gain much interesting knowledge from his pages. There are no fewer than 4,559 'alps' in Switzerland, Neuchâtel, Bern, and the Grisons standing in point of numbers far above all the other cantons, the most productive being those in Bern (net profits over 2,000,000 francs a year), Grisons, and Vaud. Of these 2,488 belong to individuals, while of the other 2,071 (or 54·6 per cent.), 1,527 are owned by communes, 80 by communes and individuals jointly, 453 by guilds or associations, and 11 by the State. Considerable space is devoted to the influence of avalanches and the Föhn wind on the high pasturages, and there is a long section on the grass, &c., grown there and on the 'Wildheu.' There is a very curious report (by the author) on the 'alps' of Frutigen, Interlaken, and Hasle, to which prizes are awarded by the Bernese Agricultural Society. It tells us all about the competition of 1872, when of the 21 runners (if we may apply such a term to an 'alp') nine were placed in the first class (the first being the Gummen Alp, above Brienz) and six in the second.

Some of the practical details and hints are amusing. We have, too, a draft set of regulations for a model 'alp,' and those actually existing on the 'alp' of Iselten, below the Scheinige Platte, near Interlaken. Finally comes a minute description of some 'model alps' in the Simmenthal, Vaud, and Schwyz, meant, no doubt, to stimulate the owners of others to improve their pastures by making use of scientific discoveries, and specially to protect them from harm and damage. Altogether the book is most interesting and contains much information which it is very hard for a foreigner to procure. There is, however, no glossary of technical terms used on the 'alps,' for which one must refer to that given at the end of Miaskowski's remarkable work on Swiss 'Allmenda,' whether arable or pasture (Leipzig, 1879).

Die Bäche, Schneelawinen und Steinschläge, und die Mittel zur Verminderung der Schädigungen durch dieselben. Von Elias Landolt. (Zürich: Orell, Füssli, & Co., 1887. 140 pages. 4 francs.)

It is hard for summer visitors to Switzerland to realise what life is in the higher valleys during the other nine months of the year. They admire the foaming torrents, the awe-inspiring avalanches, and the great moss-covered boulders by the side of the road; but they do not fully take in that each of these represents a constant source of danger to the inhabitants, particularly in the early spring. Were no precautions taken against these foes the area of arable and pasture land would, as has happened in other parts of the Alps, diminish steadily and finally vanish, while even at the best it is scarcely sufficient to supply the chief wants of the natives. Hence, in Switzerland more especially, a constant warfare has to be carried on against the forces of nature, which of late years has been carefully organised and well planned. Slopes, stripped of the forests which once covered them, have been replanted with young trees, and the mountain forests are now under the control of the Federal Government. Herr Landolt is the head of the forest organisation, and in his latest work explains how the area of productive land may be defended against the ravages of torrents, avalanches, and stonefalls. The sins of torrents form the main part of the book, and it is scarcely less interesting to read his spirited descriptions of the damage done by mountain torrents than his detailed accounts of the various ingenious means by which man tries to assert his superiority over nature. These torrents, indeed, are by far the most destructive of the three agents discussed, for they affect a far larger area of land. Avalanches and stonefalls do far less permanent damage, because they occur mainly in regions which are too high for arable cultivation and fit for pasture only. Herr Landolt gives over fifty diagrams of the various embankments, dams, walls, &c., which have been found useful and efficient. It is true that there are many technical details in the book, which is meant as a handbook for those actually engaged in the task of protecting the productive land in Switzerland; but non-professional readers will find much that is interesting in it, and will understand the meaning of various piles of masonry and balks of timber which may have puzzled them as without any apparent object—at least in summer.

PROCEEDINGS OF THE ALPINE CLUB

A GENERAL MEETING was held in the Club Rooms on Tuesday, May 3, 1887, at 8.30 P.M., Mr. C. T. DENT (President) in the chair.

Mr. J. A. VARDY was duly elected a member of the Club.

A vote of thanks was accorded to Mr. Seton-Karr for the present of a large photograph of a sketch made by him of Mount St. Elias, in Alaska.

An autotype enlargement on porcelain from a photograph of the late Mr. Moore, which has been ordered by the Committee for the Club Rooms, was shown, and received general approval. It was announced that Dr. John Tyndall had been elected an Honorary Member of the Club; also that the maps belonging to the Club had been rearranged and a catalogue of them made.

The CHAIRMAN then called on Mr. DONKIN to read his paper on 'Mountaineering in the Caucasus.'

Mr. FRESHFIELD opened the discussion on Mr. Donkin's paper, stating that Radde discards the Russian nomenclature and always adopts the local native names. He suggested that most of the peaks should be re-named, except the five that had been triangulated by the Russian staff. Klaproth is of opinion that the people in the northern valleys are Tartars, long ago driven up into the mountains by the Kabardas. The Urusbieh princes claim to be Magyars by birth.

Mr. GROVE remarked on the magnificence of the Koschtantau glacier basin, on the possibility of climbing Koschtantau, and on the general characters of Caucasian mountaineering.

Mr. TUCKER thought it would be a pity if the attention of climbers was too entirely absorbed in one mountain group. Probably next year travelling on the south side of the chain would be easier and safer than formerly, as there would be a considerable Russian force stationed in the Ingur valley.

The CHAIRMAN remarked that the inaccuracy of the 5-verst map in the glacier regions was of little consequence so far as the general traveller was concerned, as it is very accurate otherwise. He thought it would not be wise to trust entirely to Swiss porters, though a good Swiss guide is invaluable. The ascent of Koschtantau would be a most interesting one, but would require very exceptional conditions of weather.

After a short reply by Mr. DONKIN a vote of thanks was accorded to him by acclamation, and the proceedings terminated.

A General Meeting was held in the Club Rooms on Tuesday, June 7, 1887, at 8.30 P.M., Mr. C. T. DENT (President) in the chair.

Mr. H. W. TOPHAM was duly elected a member of the Club.

The CHAIRMAN announced that the late Mr. F. Warner, A.C., had left a legacy of 10*l.* to the Club, to be expended in any way the Committee might decide 'to further the cause.'

The CHAIRMAN then called on Dr. MARCET to read his paper on 'The Use of Alcohol in Mountaineering.'

The discussion on Dr. Marcet's paper was opened by Dr. HAND-

FIELD JONES, who considered that light wine was very different in its effect from neat spirit, which was pernicious. Alcohol chiefly affects the heart, which is the hardest worked organ in the body.

Mr. PACKE advocated the use of the light wine of the country in mountaineering, also 'nightcaps' when camping out.

Mr. FRESHFIELD said it was more difficult to treat the matter seriously than lightly. He asked Dr. Marcet whether he recommended the mountaineer to take spirits when overtaken by bad weather on a descent; also, whether it was wise to give the guides brandy when done up by hard step-cutting. His experience of mountain sickness was that it seldom occurred when there was much wind; only in calm weather.

Dr. SAVAGE thought that age had much to do with the question. A young man can eat and drink pretty much what he likes; but there is no fixed rule for all humanity.

Dr. HEYWOOD SMITH advocated the use of cold tea, carried in ebonite flasks covered with felt.

Mr. DONKIN remarked on the popular opinion that alcohol keeps out the cold, whereas observation shows that it lowers the temperature of the body; and he asked if there was any foundation for the opinion, frequently held, that to drink cold water alone when one is warm is very injurious, but harmless with a dash of spirit in it. In his own experience ice-cold water was only injurious on an empty stomach and when one is exhausted.

Dr. THEODORE WILLIAMS remarked on the deleterious effects of alcohol on an empty stomach, and said it should never be taken except with food.

The CHAIRMAN was glad to observe so general a consensus of opinion among those who had spoken. Tea was of great value as a 'respiratory stimulant'; so were some kinds of spirits—for instance, a mixture of rum and milk. Brandy, even when it could be obtained good, was deleterious in strong exercise.

After a few remarks in reply from Dr. MARCET a vote of thanks was unanimously accorded to him by acclamation.

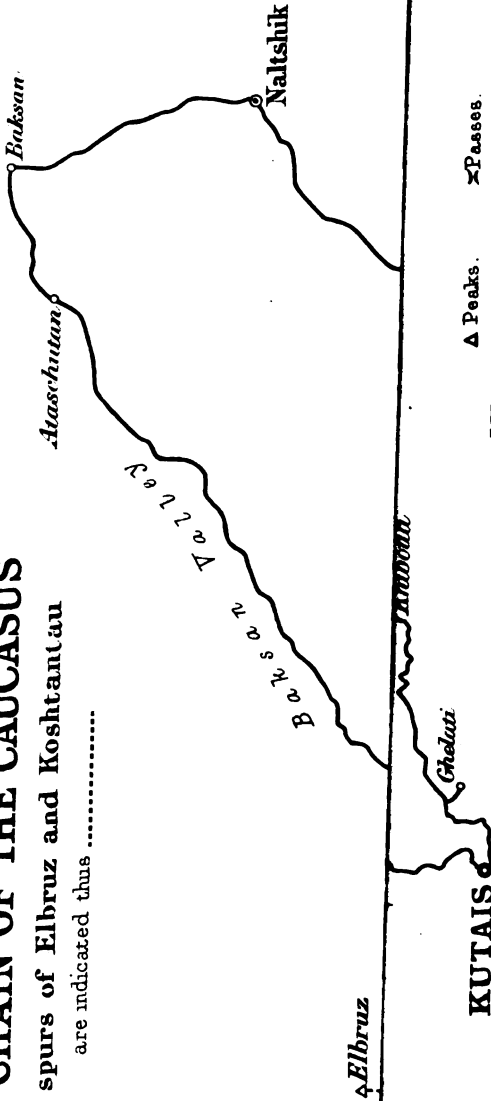
Mr. DONKIN then showed a series of his Caucasian photographs on the screen by means of a lime-light lantern, after which the proceedings terminated.

The Summer Dinner took place on Wednesday, June 15, at the Queen's Hotel, Richmond. A party of thirty-six members and their friends sat down to dinner, the chair being occupied by the President. It was the first time the Club had dined at the Queen's Hotel, and approval was generally expressed of the dinner and the wine supplied. The weather was perfect and the only regret was that the party was not a larger one.

THE CHAIN OF THE CAUCASUS

and spurs of Elbruz and Koshtantau

are indicated thus



△ Peaks. x Passes.

M. D. Freshfield's Route

Scale of Versts. 10 20 30 40 50

Scale of English Miles. 10 20 30

THE
ALPINE JOURNAL.

NOVEMBER 1887.

(No. 98.)

A SKELETON DIARY OF SIX WEEKS' TRAVEL IN THE CENTRAL
CAUCASUS IN 1887.

BY DOUGLAS W. FRESHFIELD.

L EFT London by night mail on July 10, spent two days and a night at Vienna, a day at Charkoff, a night and morning at Rostoff on the Don. Otherwise travelled day and night, reaching Vladikafkaz on the afternoon of July 19. Russian first-class carriages equal to sleeping cars, and buffets excellent. Gaiters stolen from registered package. All goods registered in Russia should be under lock and key. At Vienna François Dévouassoud, his brother Michel, and his nephew, Joseph Désaillood, all guides on the Chamonix roll, met me. At Charkoff I was joined by M. de Déchy, of Budapesth, a member of the Alpine Club and Geographical Society, and a most skilful amateur photographer, who had made three previous journeys in the Caucasus, on the first ascending, with the guides A. Burgener and P. S. Ruppen, Adai Choch (15,244 feet) and Elbruz.

M. de Déchy undertook to provide his own tents and many other articles of equipment for the party. He also took on himself the labour of buying and forwarding our joint provisions of every sort, so that I only took out sleeping bags, saddle bags, and a few luxuries and instruments from England, some of which were kindly lent me by my friends Messrs. Tuckett, Blackstone, Dent, and H. Walker. Speaking Russian, and having acquaintances among the Russian officials, M. de Déchy was able to dispense with an interpreter, and to obtain some valuable facilities. But for these inducements I should hardly have revisited the country.

July 19.—Hills of Pätigorsk in sight early. Snows clouded. Caucasus meets steppe as Alps meet Lombard plain. Loftier

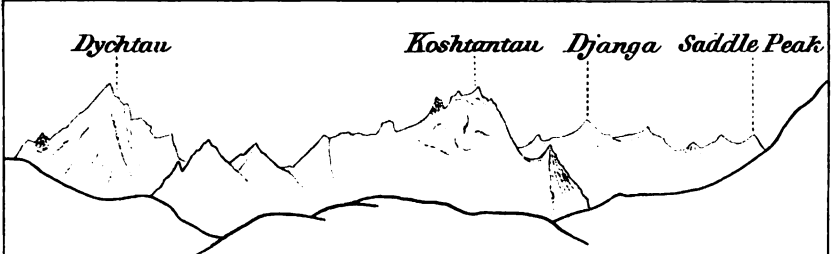
snows and bolder peaks, but no cultivation or campanili; only riverbanks with thickets of reeds, expanses of mallows and wild sunflowers, and here and there on projecting knolls the remains of a primitive hillfort or the tumulus of some forgotten warrior. So the Alps must have looked to the Romans when Gallia Cisalpina was still a new province. Met in train the son of Ismael, the Urusbieh chief, returning for the Long Vacation from the University of Moscow, where he is sent at government expense. Also Professor Kovalevsky, who was good enough last year to send me his work on the Ossetes, and was now returning to prosecute his researches into primitive laws and customs among the Chetchens. Reached Vladikafkaz in afternoon.

20th.—M. de Déchy visited officials. Sent off two cases *viâ* Kutais to Suanetia. This proved a mistake, as the impetus of the Vladikafkaz officials did not carry the cases beyond Kutais, and we might, as it turned out, have taken them across directly from Urusbieh. Shops generally well stored, but preserved meats scarce and dear.

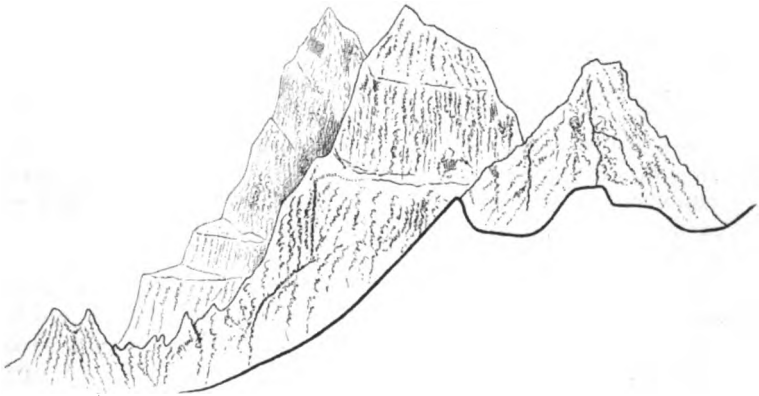
21st.—Rail back to Kotlorevska, where guides had been left to sleep in the waiting-room. Drove (six hours, two stages) to Naltshik in *telegas*. Steppe smooth, and jolting only a faint reminiscence of old tortures on the Armenian roads and rocks. Lodged at Naltshik in a squalid room in the post station, a bad beginning, as we were comfortable here nineteen years ago, and Dent and Donkin were well lodged last year.

All the chiefs of the district in town. Hamzet of Urusbieh asked by name after Moore and Tucker. Since I last saw him he has been to the Oberland to study dairy farming at the expense of the government—not to much purpose, I fear! Here also is the chief of Tchehem and the seven-foot giant of Bezingi, with several of his retainers figured in Donkin's photographs, copies of which I have happily at hand to present them with. The Nachalnik promised to expedite our journey to Urusbieh, and to forward our letters and a case of provisions in due time to meet us at Bezingi. He also provided us with a Kabardan Cossack, a gentle, intelligent, and serviceable attendant, who remained with us for three weeks.

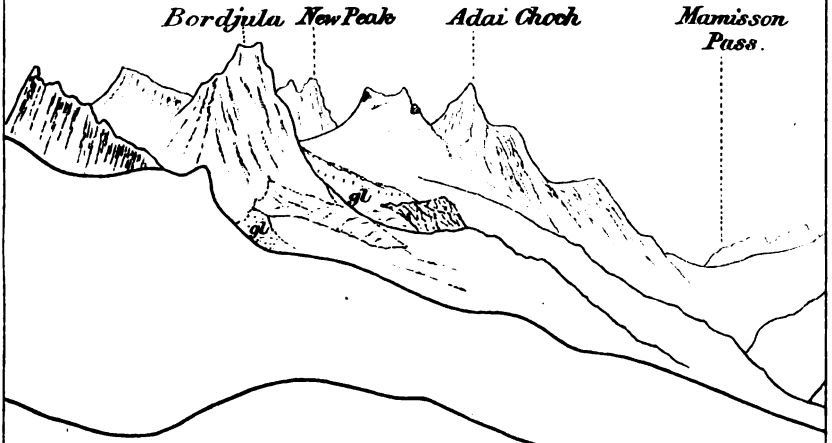
22nd.—Clear view of snowpeaks over forest range. Dychtau and another great peak ('peut-être encore plus haut,' says François) in foreground. Second peak must be Dent's Guluku, my Unknown Peak. Conclusion, Guluku is Russian Koshtantau, 17,096 feet. This explains much. (See sketch.)



THE SNOWS FROM NALTSHIK.



USHBA FROM DESCENT OF ADYRSU PASS.



ADAI CHOCH GROUP FROM GORIBOLO.

Morning spent in dividing and repacking provisions and paraphernalia—an enormous task, in which M. de Déchy displays great enthusiasm, perseverance, and ability; and I the reverse. Drive in the afternoon across steppe to Baksan station. Splendid distant view of Kazbek, a slender pyramid of pure snow rising far above its neighbours in the east. Luminous atmosphere; distances clear and soft in colour, remind me of the Roman Campagna. Drive on beside the river to the straggling village of Atashutan. Overtake local Priestav sent to aid us. Received coldly at first by Kabardan chief; subsequently invited to sleep in his house, and served about midnight with a heavy supper.

23rd.—Two peaks of Elbruz visible a hundred yards above house. Fail to get off until 9 A.M. Forty miles (sixty versts) to Urusbieh. Drive about ten versts to first bridge, where Urusbieh chiefs have a house, the best sleeping-place to divide the journey. Heavy shower in afternoon. I enjoy a solitary two hours' starlight ride, meeting many belated Tartars on the road. At last, at 11 P.M., we reach Urusbieh, and occupy the old guest-house, now somewhat dilapidated.

24th.—The chiefs of Urusbieh have not prospered. Of the three brothers Mohammed has been killed, and his murderers having denounced—falsely in all probability—Ismael as the instigator of the crime, he was kept for a time under arrest. The family lawsuit with the government as to the forests is still dragging on, though the chiefs have succeeded on a preliminary point. Their influence is far from what it was, and the village is under no control.

In the morning I walked up hillside behind village; saw some earth-pinnacles and a waterfall. Landscape severe and arid but thoroughly alpine, snowpeaks in every direction promising fine excursions. Understood Grove's appreciation of Urusbieh, after walking over the low-level passes of the northern valleys in dull weather. M. de Déchy involved in intricate and interminable negotiations for the transport of our baggage across the chain. Settled at last that our Cossack shall cross the Dongussorun (Nakra Pass) to Betsho with donkeys, while we, with eight porters, cross the Adyr Su Pass, which is very seldom used and considered difficult by the natives.

25th.—Three hours' noisy wrangle in morning as to distribution of burdens. The porters seemed to me to have some reason on their side, and were most systematic in weighing and apportioning each man's load.

Steep ascent into glen of Adyr Su, which opens opposite

village. Picturesque pinewoods, and fine glacier views. Glaciers on both sides as well as at head of valley. Long plain below glacier. Pitch tents (we have two) beside Kosh (shepherds' bivouac answering to alpine chalet, but rarely provided with any permanent shelter) 200 feet below ice. Excellent *airam*, not sour, but like Devonshire cream.

26th.—Porters all eager to start. Off at 5 A.M. Instead of taking the best line along flowery slopes E. of glacier, porters lead up moraine (Caucasians love moraine!) Fine icefall right with waterfall bursting out of it. Five glaciers meet at head of glen. Easy pass to Adyl Su westward; * said to be one also eastward to Tchegem. Obvious links in high-level route of the future from Koshtantau to Elbruz. Our pass lies deep and high in a recess, and at the eastern base of the peak, compared by Moore to the Schreckhorn. Ascent by hard snowbanks, which I hurried up, as every step brought fresh peaks into sight, to projecting rock with stoneman, where we breakfasted and roped. Then long soft slopes of névé to pass, a broad snow-col, 12,700 feet by aneroid—seven hours from bivouac. I gave the laden porters a lead through the heavy snow. On reaching the top their leader slapped me on the back and shook hands warmly, ejaculating, 'Djighite! Djighite!'—a word familiar to me from Tolstoi's 'Les Cosaques.' † Fine view of precipitous range opposite (S.), enclosing an enormous glacier flowing S.W.; Leila chain in distance. After short descent Tetnuld and Dent and Doukin's peak seen over gap at head of glacier. This gap probably leads to Thuber névé; another nearer us seems to be known as a pass from Tchegem to Suanetia. On reaching main glacier, Ushba comes into sight (see sketch). Magnificent ice scenery. Great glacier pouring down from N., another meeting ours from W. Comparable to Mer de Glace at Couvercle. Porters thought they saw bouquetin on wonderfully green slopes N. of glacier. Left ice for flowery hillside just above junction of glaciers; the united stream breaks through a narrow valley nearly due S. White rhododendrons still in full bloom. Very rough barely indicated track on slopes, then a mile or two of moraine, re-

* The Adyl Su is the tributary of the Baksan flowing from the main chain next to the W. of the Adyr Su.

† 'Un véritable *djighite* doit avoir de belles armes. Quant à son uniforme il peut être usé et porté avec négligence.' I do not think it was my ice-axe won me the title! It was applied in old days to a successful warrior, Cossack or Tcherkess.

lived at last by a bank gay with white and blush wild roses, yellow lilies, and strange blooms innumerable. Path cut off by lateral ravine; driven back to ice; recover track on further side. I run on and find good site for tents near a stream in hollow between old moraine and hillside, 200 feet above present end of glacier. Out fifteen hours, including many halts for photographing, &c. Two guides worse for *airam*; porters walked splendidly. Shower in night drove the porters for shelter into neighbouring pine grove.

27th.—End of our glacier, which I propose to call Gvalda Glacier (6,200 feet); of a second (Mestia Glacier) which has at one time joined it (6,000 feet), the lowest on the S. side of the Caucasus. This glacier is not so large, but steeper. It flows from two basins, one immediately under the N. peak of Ushba, the other leading to a pass to the Adyl Su valley, which our porters held worse than the one we had crossed. [This ice-stream is well seen from the Latpar Pass.] Fine view of Ushba from camp. The beauty of the descent into Suanetia more than realised my recollections. The enormous glaciers of the chain are met by the most luxuriant hillsides. There is no intervening zone of barrenness. Green things were growing even on the rubbish which covered the end of the glacier.

Below glacier path level and scenery tame to first houses on left bank; whence we crossed open sunny slopes, hay meadows and copses, with fine views of Ushba and the towered hamlets of Mestia, and the glaciers of the Leila in the distance. Met boy with dish of trout. Took up quarters (easy four hours) at Cancellaria (a small building used both as a court-house and travellers' bungalow. These shelters contain, as a rule, no furniture beyond a raised platform, though a bench and table are sometimes found). Starshina (village headman, appointed by Russians, and distinguished by wearing a chain), a huge wild man with a broad Babylonian physiognomy. A very small sharp boy interpreted for him. Bought a sheep and feasted the men of Urusbieh. One of them took a great fancy to me, and on parting shook hands most warmly, called me once more a 'djighite,' and offered to remain with us as long as we liked. I return to my old opinion that the Urusbieh hunters are the raw material of glacier guides. They are far better on a glacier than most Tyrolese were twenty-five years ago, and they are untiring walkers and weight-carriers. I strolled in afternoon to junction of Mestia and Mushalaliz torrents. Past school-house; room decorated with prints of

single Cossacks pursuing Turkish armies, charts of the heavens, and pictures of common objects of civilisation. Tetnuld's silver spear high in air over thickets of azalea and rhododendrons, now past bloom. D. and D.'s peak seen on N. flank of Tetnuld. Counted over seventy towers in neighbouring villages. Above Cancellaria is a very ancient birch tree, with several rude stone seats under it.

28th.—Rode or walked through Latal to Betsho (about 4 hours). Excellent path on right bank through the ripening barley-fields between neat wattled fences. Splendid scenery. Foreground of white towers, golden barley, and graceful birches. In middle distance slopes, on which the sombre groups of pines and firs show as shadows among the lighter foliage of the birch, beech, and poplar woods. Snow peaks brilliant behind defile dividing Mestia and Mushalaliz.

Curious church at Nendjar, built of carefully squared blocks of limestone. Bell (as in Corsica) outside on framework. Chancel hexagonal. Graves round church, others round an old pear tree some distance off. Seats under tree as at Mestia. D. and D.'s peak now becomes prominent. Lunched under great sycamore at Latal, under fire of the women's eyes, a most picturesque group. Two old churches or chapels here, one with arcade of arches round semicircular apse. All kept locked up and impossible to enter. Crossed well-remembered little pass to Betsho, whence Moore first caught sight of Ushba in 1868. On Betsho side, just below the top, there is a level shelf of hay-meadows, ringed with birches, poplars, and azaleas, one of the loveliest spots imaginable. Lost my way in the wood, and on coming out found myself above the government buildings, erected after the disturbances in 1875, and now half in ruins. Lodged in large, but comfortless, Cancellaria, and most hospitably entertained by the Russian Priestav and his wife. This is the centre of authority, and a post comes here, more or less regularly, every fortnight. Found our Cossack had arrived the day before by the direct Betsho pass (compared by M. de Déchy to the Alphübel), with the luggage on two donkeys! Prince Wittgenstein, an Austrian who has spent his life in the Russian service, and an Abkhasian noble, Prince Shervashidze, arrived with a numerous retinue in search for gold. Their train gave some idea of the picturesqueness of the ancient mode of travel. Prince W. speaks English fluently. He told me that there are horse-passes by the valley of the Dal, from Suanetia to the Kodor, but that the paths nearer the great chain, between the Neskra and the Kodor, used

formerly by the Baksan Tartars, are no longer passable except on foot.

Fireflies and glow-worms at night. Height 4,500 feet. Radde saw fireflies 2,000 feet higher, near Adish.

29th.—I started at 5 A.M. with Michel and Joseph to reconnoitre Ushba. Long grass walk up valley, then good steep horse-path through fir forest, and up flowery slopes to foot of Gul Glacier* (circa 9,000 feet). Loitered at first owing to doubtful weather. Sky clearing, pushed on fast up glacier, avoiding icefall by rocks on E. bank. Determined to make for rock peak opposite Ushba, forming E. end of ridge, descending from N. peak, and separating the small Betsho, or Gul, Glacier from the great Mestia Glacier. Steep upper slopes of névé in horrible condition. Took to rocks. 'Sped not our feet without the aid of hands.' Steep, but no real difficulty. More than two hours' hard climbing brought us to the ridge. Nasty ice-filled gully between first and second peak; three hours from glacier, ten hours from Betsho. Height about 12,500 feet (aneroid unluckily left behind), yet only the Hörnli, or footstool of Ushba.

Wonderful and most interesting (to a climber) view of Ushba, its twin peaks, and the great snow-ladder between them. Snow avalanches constantly falling over the cliffs and sliding down the slopes. The whole mountain hissing with snow, like a snake surprised by an enemy. Wish I could stamp on its head. *Faciam per alium, spero*. On other side stones go bounding with a sulphurous reek down a very great precipice into the S. basin of the Mestia Glacier, a noble curve of ice. At its head, opposite us, rise two noble peaks, of steep writing-desk form, the sloping W. side being snow. Crests of Tetnuld and neighbours clouded. All upper Suanetia in sunshine. Leila opposite, higher than ourselves (13,500 feet?). Built stoneman.

Loose rocks and snow on ice treacherous in places. After one hour's careful descent took to névé, and slid down on young avalanche to foot of ice-fall. Found gold-digging princes building a birch-tree hut in the glen above Mazer. Got back to Betsho in four hours' sharp walking from top, just avoiding night and a thunderstorm. Friendly Priestav provided supper. Very stiff in the shoulders.

30th.—Rain or cloud most of the day. Glad to rest. Priestav ordered horses.

* I take this name from M. Iljin. See Petermann's *Mitteilungen*, vol. xxx.

31st.—Priestav provided us a Suanetian Cossack to act as interpreter. He proved almost useless. No horses until 1 P.M. Ushba coated with fresh snow. Examined carefully 'Burgener's route,' up southern peak. I and François went with luggage by Mestia and low pass to Ipari, the rest of the party by the route which I had followed in 1868. Baggage horse overloaded and much delay. One of M. de Déchy's barometers unfortunately broken. We crossed pass by splendid moonlight, arriving long after the others, at 11 P.M. Slept in rough Cancellaria.

August 1st.—Rode up narrow, but most picturesque, glen of Adish torrent, stream easily fordable. Glimpses of white crest of Tetnuld and one splendidly framed view of Ushba. Emerged suddenly (3 hrs.) upon barley-fields of Adish.

[This isolated hamlet is attached to Ipari, and has no Starshina, or priest. The people were pagans until 1865, when they were officially converted and baptised. In 1864 Dr. von Radde passed through the place by night to avoid dealings with its inhabitants. Ipari, Kalde, and Ushkul are the three wildest communes of Free Suanetia, formerly the wildest part of the Central Caucasus. This year I have visited all three.]

Halted by shed at top of village. Villagers asked high prices for provisions, and quarrelled noisily among themselves for our custom. All joined amicably in a photographic group. On parting, one man demanded money for our having rested on his land, and, when laughed at, had recourse to the traditional pantomime of fetching his gun. Another laid hold of my ice axe, which I had stuck in the ground and forgotten while mounting, and when the Cossack rode back asked money for its return. Kabardan Cossack was indignant; the Suanetian impotent. We got out our revolvers for the only time in the Caucasus. A few copecks, however, settled all difficulties, and before leaving our Cossack bought a sheep. The whole affair was nothing more than an attempt at extortion, enforced by traditional violence of tone and gesture. Compared to our encounters in 1868 this was but a petty wrangle. Of real passion on one side, of danger on the other, I saw no trace. The marked improvement in the people generally in Suanetia during the past twenty years is creditable to the government and its local officers. Even in the faces of many of the rising generation one sees traces of less violent habits and civilising influences. Adish in its remote recess is naturally the last spot to reform.

Camped in a birch copse, 1 hr. from village close to glacier. M. de Déchy found from marks made two years previously, that ice is sensibly advancing—11.30 mètres in two years. Purity and grandeur of icefall more than equal to my recollection.

August 2nd.—Pouring rain in night. Guides' tent pitched in hollow, and they consequently moist and miserable. Cossacks apparently quite dry under birch-bark shelter and bourkas. François opens tent and announces in a deplorable voice that the remainder of our sheep has disappeared. Further researches reveal that the waterproof cover over luggage pile has been disturbed; the lock removed from M. de Déchy's hand-portmanteau, and the clothes inside cleared out; the lid of the medicine chest lifted—and the contents left untouched. Some of the Steigeisen kindly procured for us by Viennese friends, a revolver and several minor objects stolen. No scientific or photographic instruments opened. Waterproof cover carefully replaced, so that we did not discover the more serious theft till long after we had missed the mutton. Thieves must have been daring and deliberate. The pile was not distant three yards from the Cossacks or our tent, and between the two!

[An exaggerated report concerning this theft and its consequences was published during my absence in some English newspapers ('Standard,' August 24). I regret it, not only because of the needless anxiety caused to many of my friends, but also on account of the mischievous effect the report is likely to have in spreading completely wrong impressions as to the difficulties or even dangers of Caucasian travel. It would be a misfortune if intelligent travellers were, on the strength of an exceptional act of theft, the prompt punishment of which will be the best security against its repetition, frightened off from a country which is, in my opinion, now ripe for the better sort of Long Vacation tourists and Alpine Clubmen. I wandered by day and night, often alone and unarmed, on both sides of the chain without the slightest difficulty, meeting with nothing but pleasant greetings. Mr. Peacock, H.B.M.'s Vice-Consul at Batoum, entirely confirms my opinion as to the general security of the mountain districts.* To readers of this diary it will not be needful to correct the statement that my journey was cut short by the

* This year there were five, or, counting my second visit, six, different parties of visitors in Suanetia, none of whom met with any difficulty that I have heard of.

'robbery.' In fact, an arrangement to go with M. de Déchy to Basardjusi was not concluded until a week after the robbery took place.]

Rain continues to pour pitilessly. Determine to descend to Mushal, and call up Cossacks from Betsho on the men of Adish. Struggle with wet ropes and canvas; and to preserve photographic cases from damp during packing. As we start sky clears. Village seems almost deserted as we pass. Beautiful afternoon stroll over the high path to Mushal. Tempted to camp at the exquisite spot where the view opens into the Mushalaliz. Luckily resist. Meet large party of haymakers (Caucasian hay-making seems independent of weather). Steep descent. Quarter ourselves on priest of Mushal, who has a good timber-house with a broad balcony running all round it, and a view of Ushba.

3rd.—Weather doubtful. M. de Déchy sends off Suane-tian Cossack with letter to Priestav at Betsho, and priest's son to Adish with fifteen roubles (28s.), to attempt to compound felony and recover stolen goods. He was unsuccessful. I with two guides make a false start for Tetnuld. We are soon brought to a standstill by a trackless forest and a rain-storm. Light a fire under an impenetrable pine, and wait until the rain rolls off. Return. Day of rainstorms and gleams, like English Lake weather.

4th.—More storms and rarer gleams. Day of arrivals. First, a grim old Cossack sergeant with three comrades come to look up the men of Adish. Then in many detachments, like a stage procession, the Bishop of Poti and suite, on an episcopal tour; a most picturesque cavalcade of mules, monks, and long-haired singing men. The Bishop has the best room, and we share the second with his secretary and chaplain, and a Mingrelian gentleman in his company. The ecclesiastics commence at dusk an interminable service. About 11 P.M. supper is served, to which all, except the Bishop, sit down. Cheese, mutton roast and boiled, fowls and pork, with very fair Mingrelian wine in abundance. The robes and long hair of the ecclesiastics make the scene a curiously vivid reproduction of a *Cena* by a sixteenth century master. Our host is exactly like one of Albert Durer's apostles.

5th.—The Bishop and his party ride off. I agree with M. de Déchy that I will start again for Tetnuld, undertaking to meet or catch him up on the Zanner Pass on the 7th, so that no chance of a fine day may be lost for the passage of the chain. He meantime kindly undertakes the very tiresome task of organising a band of porters

and getting them under weigh. There is only one man in the village who has ever crossed the pass, which has fallen into complete disuse for twenty years.

[M. de Déchy's account of the rest of the day. Early in afternoon some villagers came in from Adish. After them the Priestav arrived, having lunched at Mestia with the Bishop. The villagers were summoned. First the two men who demanded money of us. 'What do you mean by asking money from my guests—honourable persons who are escorted by Cossacks?' Their side-arms were taken away, and their hands tied behind their backs. Then came the turn of the fifteen heads of families. They protested that the village was innocent; that the robber must have been a chance traveller. 'That cannot be,' said the Priestav. 'You know perfectly there is no road, and there are no travellers in your valley.' They were given two hours to produce the property. Nothing being forthcoming, their side-arms were, after some pretence of resistance on the part of one or two, taken from them, and they were ordered to remain in custody at Betsho until the goods were returned. 'I am anxious,' said the Priestav, 'to show Mr. Freshfield as an Englishman that we can act with vigour in case of need.' And certainly no English officer could have come to the help of his countrymen with more vigour, good judgment, and (as the event proved) success than M. Aetovsky, the excellent Priestav, came to ours.]

I started with the three guides, and a Suanetian to show us the path to the glacier, about noon. Very rough, and in places entirely obliterated, track on right bank of torrent. Picturesque ravine. In two hours reached foot of glacier; about 8,900 feet. Two streams just join; one, the Zanner, coming down in an icefall from an invisible upper region; the other descending steeply from the base of the pyramid of Tetnuud. Find at 9,000 feet on right bank of Tetnuud Glacier an excellent spot for bivouac under an overhanging crag among rhododendrons. Discover horns and bones of bouquetin (*Capra Caucasica*), probably killed by avalanche, close by. Sky clears at sunset.

6th.—Woke at 12.30 A.M. Started at 12.45 by cloudless moonlight, after comfortable evening in sleeping-bag. Up avalanche *débris* and moraine to top of lower icefall. François, with old instinct, charged straight in the moonlight at the vast slope of séracs; and we got through without serious delay, though as much by luck as skill, the bridges corresponding curiously. Wonderful ice scenery at

sunrise on a great plateau. Streamers of light opposite sunrise from western horizon. Elbruz and Ushba flash out like beacons over the lesser mountains. Turkish ranges, still snow-streaked, far away to S.W. More crevassed slopes to little plateau, narrow but long, immediately under peak. This we have to traverse in its whole length. Snow heavy, despite cold. Very steep crevassed bank leads up to a last snow-plain only a few feet under the notch in the S. ridge we have been aiming at. Pushing our leader over a Bergschrund, we reach this saddle at 9 A.M. Glorious outlook. At our feet Adish and its glacier, at the head of its névé Djanga, and beyond it the five-crested peak I have hitherto called Koshtantau, the Shkara of the Russian map and Dr. Radde. Our height 15,000 feet. Very long ridge between us and summit. Snow in perfect condition for safety, but too soft for speed. Precipitous slopes all the way on the Adish side. View down like that on the Scheideck from the Wetterhorn. Successive steeps in the ridge hide summit. Leader has hard work, and is constantly changed. At last, four hours after leaving saddle, step on to top, a short level snow-ridge. Fronting us, beyond the hitherto unseen Zanner icefields, stands Dent and Donkin's peak, holding its own well, but I think a little (without having their measurement in my mind, I put the difference at 100 to 200 feet) beneath us. Aneroid marks 16,700 feet. A snowy ridge, moated by huge ice-cliffs, divides the Zanner and Adish névés, and connects Tetnuld with watershed. It abuts against the secondary summit, shaped like a Tartar saddle, between Djanga and D. and D.'s peak. Koshtantau looks well, but is almost completely snow-coated. Dychtau is comparatively ineffective. The most distant point of Shkara is the highest.

I put the peaks tentatively as follows:—Shkara, 17,200 feet; Koshtantau, 17,096 feet (5-verst map); Dychtau, 16,925 feet (5-verst map); Djanga, 16,900 feet; Tetnuld, 16,700 feet; Gestcla (D. and D.'s peak), 16,550 feet. At any rate, these are the six giants of the central group, and four, if not all of them, come between Elbruz (18,526 feet) and Kazbek (16,546 feet).*

* I use, without hesitation, the name Tetnuld for the peak I climbed. It is the peak conspicuous throughout Suanetia, and described by that name by the visitors to that valley, from Dr. Radde to M. de Déchy. It is also so called by the natives. It is a curious accident that, on the watershed almost in a line with it, and less than two miles distant, there should be another peak very similar in form and almost

Elbruz, as we rose, lifted itself higher and higher above all the rock-peaks of the main chain, and now stood up supreme, a great white throne. Absolutely impossible to detect with the eye any difference in height between its two peaks, or those of Ushba. As the E. peak of Elbruz is nearer it may well be lower, and I do not wish to throw doubt on the published measurements. I fancy the N. peak of Ushba is a few feet the higher of the two. Reach summit at 1.15 P.M., leave at 2. Descend to bivouac in five hours without difficulties, avoiding lower séracs by keeping to the left side of the glacier. No sign of our party on slopes beside Zanner Glacier. Sup on contents of one of Silver's admirable self-cooking soup-tins. Make guides pile up rhododendron branches, and sit beside the blaze watching Ushba fade into a shadow among the marvellously bright stars; but no answering signal according to agreement. Find guides sound asleep. Night cold.

7th.—Rouse guides, and get off by 5 A.M. Glacier surface hard-frozen, and hour's descent trying to stiff limbs. Succeeding steep ascent beside Zanner Glacier still more so for laden guides. François first discovers tracks of our party. At top of ascent (9,000 feet) find their camp. Fire had been lit behind a boulder where we could not see it. Huge glacier basin opened out, with Gestola N. and Tetruld S.; the peaks both beautiful snow pyramids, their lower slopes cut off by tremendous séracs and icecliffs. After an hour and a half of level ice strike up rocks W. of lofty icefall, coming from higher basin N. Hard steep slopes, where a slip would be nasty. On reaching top, Joseph hails caravan, thirteen in number, sitting on snow on further side of icefall. They have mounted the opposite bank. Catch them up at

equal in height. It was natural that A. W. Moore should have thought that he recognised in the peak on the watershed seen from the Bezengi Glacier the Tetruld of Suanetia. But the two mountains are quite as distinct as the Weisshorn and Dent Blanche. Whether the peak on the watershed should be called Gestola is a question of far more doubt. The name has no authority beyond that of the 5-verst map, and I use it provisionally, knowing no better. I have omitted the prefix Tau in the case of all the Suanetian mountains. I first used it through reading a G (Gora) as a T on the map. Tau is Tartar, and is applied by the Mohammedans N. of the chain to a high peak or pass, *e.g.* Minghi Tau, Adyr Tau. Compare the Tauern of the Tyrolese Alps. Mr. Donkin's map requires correction as to everything S. of the watershed, except the actual position of Tetruld and the spur it stands on.

about 10.30 A.M., and fall on provisions. Porters, an absurd group with blackened faces and all sorts of apologies for veils. They decline—not unnaturally—to relieve guides of their heavy loads. Third steep ascent to the upper snow reservoirs; immense undulations; snow growing soft. Hours pass in slow advance; porters begin to wander uncertainly. I insist on making for gap at base of rocks far ahead. Mists pass over. Porters sit down and pray: seem to have by heart a form of prayer suitable to the emergency; hailing the sun when it begins to pierce with a jubilant hymn or howl. I go ahead, and try to force the pace. Snow dreadfully soft. We are all fairly bemisted for a time, but rocks on left keep us straight. At last, at 6 P.M., thirteen hours after leaving bivouac, we stand on crest of the Caucasus, looking across to the great peaks and down on the basin of the Bezingi Glacier. All the range from Gestola to Shkara clear in evening light. What a prodigious array of snowy cliffs and crests! Opposite Koshtantau (Guluku) a huge rock-peak with two high shoulders; no mountain view I have ever seen approaches this in sublimity. The hour, of course, added to its impressiveness.

We now found cause of disuse of pass. High cornice and Bergschrund on further side. Perfectly easy descent, however, from point 150 feet higher to our left by a rib of rocks and snow-slope. We descended. Porters refused to stir. They sat on the crest and screamed like pigs being put on board a steamer. The poor Cossack and we got hoarse in adjuring them. At last three tied themselves with the Cossack and ventured. They got down the rocks, and then tumbled all of a heap over the Bergschrund, which was not open enough to engulf a stick, much less a man. Cossack lost his dagger. The remainder followed with ludicrous precautions. I never saw men in such terror at so little. I should have liked some of the ignorant critics who think mountain people are necessarily mountaineers to have seen our Suanetian troupe. More than an hour was consumed in this five minutes' descent.

7 P.M.—Hastened across small soft névé to ridge of rocks marked by stonemen. Here, as it was already growing dark, we proposed to halt. Fortunately the porters insisted on going on, and as the wind was blowing bitterly we agreed. Ran down 1,000 feet over slopes of soft slate to the first level, about 1,800 feet below pass, and as much above Bezingi Glacier. Pitched tents rapidly in the dark, and warmed Silver's soups. Porters chanted triumphantly a ballad of Queen Tamara,

borrowed our ice-axes to dig themselves beds, rolled themselves up in their bourkas, and were soon asleep.

8th.—Koshtantau clear early, but cloud on Shkara. Walk back to stonemen with Joseph to recover aneroid, see panorama once more, and in hopes of seeing a bouquetin. None visible, though fresh tracks abound. For the second time I saw no wild animal during my whole journey. Showers begin. Return to camp and determine to descend towards Bezingi. Grass slopes to great glacier. Find flocks and shepherds. Porters take to ice. Long laborious walk in drenching rain over a geological museum of boulders of every kind of gneiss, granite, and slates. Pick up small fragment half slate, half granite. We make a mistake in leaving glacier on left bank of torrent, and descending a long hour over stony ground, instead of camping on right bank at opening of Mishirgi glen. Pouring rain, no fire possible; two porters sent on to Bezingi to order horses for next day. Michel confesses to suffering from a frostbitten foot since Tetnuld. Cossack nearly snow-blind, and in great pain.

9th.—At 7 A.M. mist; an hour later blue sky. I started at once back to Mishirgi Glacier with François. Crossed front of Bezingi Glacier; snowpeaks glorious. Left François opposite Kosh. Went on alone up grassgrown moraine on S. side of Mishirgi Glacier, a pleasant path, to spot where this abuts against the mountain-side. Then walked out and on into centre of glacier (10,000 feet). Full view of N. face of Koshtantau and extraordinarily steep range connecting it with Dychtau; latter peak out of sight at the end of a further bay of the glacier. Very warm; enjoyed invigorating bath in glacier pool, and returned delighted with my solitary ramble in this wonderful mountain recess. (See M. de Déchy's excellent photographs of Mishirgi Glacier; he has just not got a view of Koshtantau among them.)

The glaciers of the central group are generally advancing, after a period of retreat. Their advance is demonstrated in this way. In the Caucasus moraines grow quickly green. Fresh piles of rubbish have been shot in many places down the grass quite recently. This greenness—one of the characteristic beauties of the Western Caucasus—is, I fear, conclusive proof of a moist climate. However, I only had four wet days and two half wet days in six weeks.

Returned to camp. Grateful to find M. de Déchy with lunch and horses all ready. Strode and rode down to Bezingi over flowery pastures in little more than two hours (3 hours 15 minutes from Bezingi Glacier). Guest-house damp and

squalid. Seven-foot chief produced a bundle of letters for me out of his sheepskin coat, and the box of provisions from Naltshik.

Looked at Michel's foot and did not like it. Foot generally inflamed.

10th.—Have to speak decidedly as to prices of provisions. Bezingi is in a transitional state. Old custom of hospitality breaking down, and new tariff very elastic. Chief sends us one loaf broken into fragments to make it look larger. Michel left in charge of chief's son. We take horses and go up side valley, which according to Russian map ought to lead to the noble peak the map-makers call Dychtau. [The Dychtau of the natives is probably the range over the Dychsu glacier; otherwise Shkara.] Dull scenery. Many pasturages. Buy sheep. Camp near good-sized glacier in E. branch of valley.

11th.—Ascend glacier to point commanding view of its head. Upper ridges of Dychtau apparently fenced in by icefalls and cliffs. M. de Déchy photographs. I suffer from a preconceived idea that the W. glen will furnish a way to Dychtau. Top of peak visible at its head I assert to be Dychtau, against the opinion of François and M. de Déchy. Main source of my delusion was not sufficiently disregarding topographical details of 5-verst map. I resolve anyhow to climb the peak.

M. de Déchy proposed that, in order to send back Michel by next steamer, and visit Basardjusi in Eastern Caucasus (which he had long been urging on me), we should give up Balkar; and offered to return himself at once to Bezingi, ride down to Naltshik and devote a day to repacking, so that on my arrival, twenty-four hours later, we might go on at once to Vladikafkaz. This arrangement I agreed to, mainly influenced by Michel's condition, which was a blow to my hopes of further climbing, and also a source of some anxiety.

François, Joseph, and I proceed up glen with small tent, camp on rock-strewn plain (10,000 feet), at junction of torrents from two glaciers. Cold night, guides not having brought enough wraps.

12th.—Start at 2 A.M. on glorious morning. François finds his way admirably, in the light of a waning moon, up steep rocks, over very rough ground, and across hard snow-slopes. By a golden dawn we enter a charming little glacier cirque, as flat as a cricket ground; ascend steep snow between green crevasses to northern ridge of peak ($3\frac{1}{2}$ hours). Large glacier on further side with broad snow-peak beyond

it. Ridge barred by a rock-tower. Obvious breach blocked by boulders. Joseph tries right, and finds rocks difficult; I left, and discover practicable ledge. The crest beyond is long and steep, but nowhere difficult. Keep to rocks as much as possible, owing to detestable condition of snow. Reach summit 9.30 A.M. in about three hours' climbing from foot of ridge. Fine top and glorious panorama—Mishirgi Glacier at our feet; magnificent N. face of Koshtantau, seven thousand feet of Caucasian snow-cliffs, immediately opposite—a sight never seen before by mortal eyes—top of Dychtau only visible over shoulder of broad intervening snow-crest. Saw several avalanches fall from cliffs E. of Koshtantau. Ushba, Tetnuld, and Gestola in sight; Shkara and Djanga hidden; Kazbek in the E.; beautiful far-away views of the steppe beyond Vladikafkaz and Pätigorsk. Glacier group N. of Uruch makes a grand show, seems to have several peaks of about 15,000 feet. Elbruz enormous as usual. Complete and interesting sight of the long lofty spur between Tchegem and Urusbieh. Its peaks are, for the Caucasus, tame, and there are at least three practicable passes over its glaciers.

Our peak may be the Mishirgi Tau of Mr. Donkin's photograph. Aneroid gives it over 15,200 feet. M. de Déchy thinks the villagers at Bezingi (it is the highest summit on the E. side of the valley visible from the village) call it Uku.

Rested a long time on the top and on the ridge, enjoying the view, the beautiful colours of the distances, and the magnificent snowcliffs opposite. Descended easy but long tiresome slope to the E. glacier. 'Tire' perhaps in ourselves partly, for we had done a good week's work. Glacier sloshy or stony. Bread ran short. Were successful in getting horse left at Kosh recaptured and loaded. Got back easily to Bezingi by 7 P.M. Found provisions left out for us, asked for samovar, and cooked our supper. Chief's son distinguished himself by making me understand that if he 'sped the parting guest,' M. de Déchy had promised that I would give him an English knife.

13th.—Up at 4 A.M. Horses caught and saddled by 6, so young chief got his knife. Beautiful day and pleasant ride. Valley scenery in morning lights an agreeable surprise. Castle on opposite hill, above upper end of defile. Beautiful glimpses of our peak, then of Djanga and Koshtantau from gorge; lunch by stream at foot of ascent—four hours. Splendid views all the way up of the lawns and forests to

the E., and the snow-peaks behind us. Cross ridge and enter Naltshik forest; halt on its edge in glade paved with wild sunflowers; wood romantic but interminable; path execrable at first, then improves and follows stream bed. To avoid wetting his boots one of our horsemen jumps up behind me; becomes a nuisance when he begins to chant Tartar melodies into my ears; shake him off and wind up with a brisk canter into Naltshik.

I suffered from streaming cold in the head for twenty-four hours, the only indisposition I had in the Caucasus; guides also were in excellent health except on first pass. Mountain climate is most healthy and invigorating.

On arrival M. de Déchy announces that, owing to a change in his family arrangements, he intends to return next morning to Odessa.

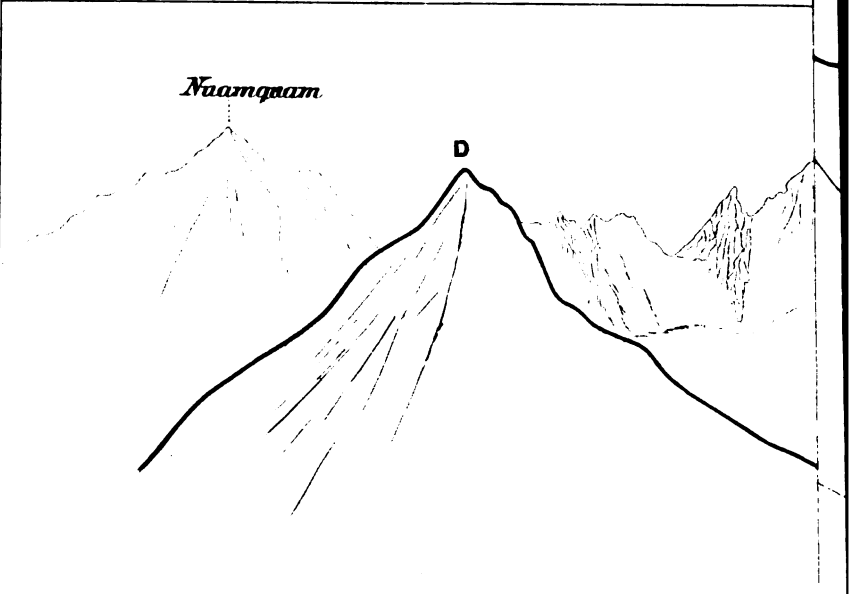
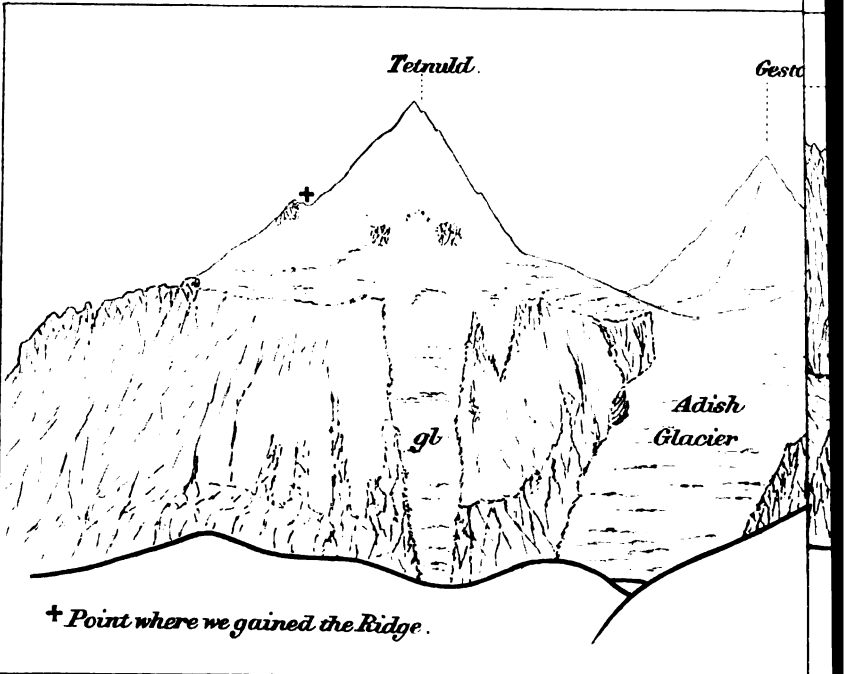
14th.—No sleep, revolving plans. Decide, chiefly on Michel's account, still to go to Tiflis, and thence either to Basardjusi or back by the Mingrelian valleys to Suanetia—if I can find an interpreter. There is no one at Naltshik this year who speaks any tongue but Russian. Start in telegas at daybreak. At station I and the guides leave for Vladikafkaz, and M. de Déchy for Rostoff. Out of thirty-five dozen plates he brought out he takes home nine dozen negatives of Caucasian glaciers and groups. Thanks to M. Boichevsky, the governor's secretary, arrangements for crossing Dariel are speedily made. Diligence tickets for guides. I find at hotel a Russian colonel and his wife, with whom I share a carriage. Doctor sees Michel, and advises complete rest. Comfortable bed, after twenty-three nights of substitutes.

15th.—Over Krestowaja Gora to Mleti, 10 hours' posting. The scenery of this road—even the Dariel gorge—struck me as insignificant. Travellers who think that by driving over it they see 'the Caucasus' are grievously deluded.

16th.—Reach Tiflis 3.30 P.M., in time to pay calls and visit bazaar. Dr. von Radde dissuades me from Basardjusi, on the ground that the mountains are more interesting geologically than for their scenery, and hardly worth the long journey except as part of a Daghestan-Kakhetia circuit.

17th.—Despatch Michel home *via* Batoum and Constantinople.* Inspect Dr. von Radde's most interesting and artistically arranged Caucasian Museum. In the afternoon one

* He got home without difficulty, and has completely recovered the use of his foot.



VIEW FROM NAKSAGAR PASS.

of the thunderstorms Tiflis is famous for burst. I was imprisoned while making purchases in the Persian khan and forced to take refuge on upper floor. Extraordinary sight; shops turned into waterspouts and streets into raging torrents.

18th.—Train to Kutais; Bakou line broken by storm.

19th.—Interview three interpreters; showy Mingrelian, apathetic young Swiss, and wiry middle-aged German. Secure the German. Capture in government offices two boxes sent off from Vladikafkaz. Set up in provisions. Cloudless weather sets in. Two young Germans in the hotel with a Kals (Tyrolese) guide and an interpreter, slowly preparing to start for Betsho and Urusbieh.* Get off in light marching-order without tents in afternoon, and ride 20 versts up Rion on the Marnisson carriage-road.

20th.—By Rion valley and low sunny pass to Zagiri. Sleep at Duchan (wine-shop). Meet our Suanetian Cossack and hear of the recovery of M. de Déchy's effects stolen at the Adish Glacier. The culprit was a native of the village.

21st.—Difficulty in getting horses owing to desultory officials. Nachalnik absent. Picturesque parties of church-goers pour in. Fine ride up narrow valley of Skenes Skali to Lentechi. After further delay our interpreter distinguishes himself by engaging fresh horses to Ushkul. Above Lentechi superb forest scenery. Pines and beeches of an 'unbelievable height.' Night falls and the woods are lit up with multitudes of fires, and noisy with the sound of small gongs and answering shouts. All the male population are afield to keep off the bears from the maize crops. Halt at the first house in Tcholor. The female garrison refuse us admission in the absence of their protectors, and we sleep under an open shed.

22nd.—The ascent to the Latpar pass is long and steep but picturesque. On the pass we find Herr Zumstein, of Gressoney, and Mons. R. Lerco, with an Oberland guide and an interpreter, bound for Elbruz, Kazbek, and Ararat.† Glorious panorama of southern side of central group (see sketch), with all its peaks and glaciers. The path descends along a

* I learn from the *Æster. Alpenzeitung* that this guide reports that his party were driven back by storm from Elbruz on September 1 'without being able to ascertain whether they had reached the top,' and that they also failed in two attempts on Kazbek.

† According to a letter of M. Lerco (*Rivista* of the I. A. Club for Sept., p. 292), this party succeeded in ascending Elbruz and Kazbek.

projecting spur commanding the loveliest prospects over the hills and valleys of Suanetia, swimming in sunshine, to Ushba, Tetnuld and Shkara. Tetnuld closely resembles N. face of Weisshorn, and looks noble between the birch branches. Halt at the guest-house of Kal, a solitary loghut, clean and comfortable. Villagers bring us provisions. Ushba clear at sunset. Day of memorable splendours.

23rd.—Glorious morning. Noble view up Kalde glen of Djanga and Shkara. See the stumps of the razed towers of Kalde, where two Russian officers were murdered in 1876. Ride up to Ushkul. On entering Tshubiani (300 yards below Jibiani, our old quarters in 1868), greeted by a gentleman in civilised costume and offered hospitality. Our host proves to be M. Bussarion Nichoradse, a native of the village, now a schoolmaster at Kutais, and here only for his summer holidays. He provided me with a bed and many comforts, and gave me much valuable information. The two castles, one close to Tshubiani, the other high on the hill S. of it, are popularly held to have been the summer and winter residences of Queen Tamara. No one at Ushkul can read Russian, and the Starshina keeps all the official papers unopened in a locked chest. There is a priest paid 40*l.* a year by the government; he enjoys a sinecure. Rode on to the source of the Ingur in the Shkara Glacier (2 hours). My horse nearly carried off its legs in the torrent. Climb grassy ridge opposite Shkara. Find on brow (9,500 feet) two stonemen. The stupendous precipices and five peaks full in front; two glaciers meet at my feet. A tiny blue tarn close by. The Belvedere Alp of the Caucasus. Reluctantly turn back. There is no direct way practicable for native porters, either from here or the next valley eastwards to the Dych Su Glacier, as I had hoped.

24th.—Engage fresh baggage horses, which are not ready till 9 A.M. Spend two hours on the castle hill of Tshubiani in view of the snows. Path over great hay downs to the Naksagar pass. A few yards left there is a grand view of Shkara and the peaks round the Scena valley. (See sketch.) Pleasant descent through rampant flowers. Scenery culminates where, at the meeting of two valleys, four families from Ushkul have made a settlement. Their barleyfields and loghuts give life and a centre to the landscape. Magnificent woods of various foliage, pine-forests, rock-peaks. Shkara, resembling Monte Rosa from Val Anzasca, fills the background.

Good path ceases. Where two ravines deepened by rains

Ushba

m. Stulove.



A



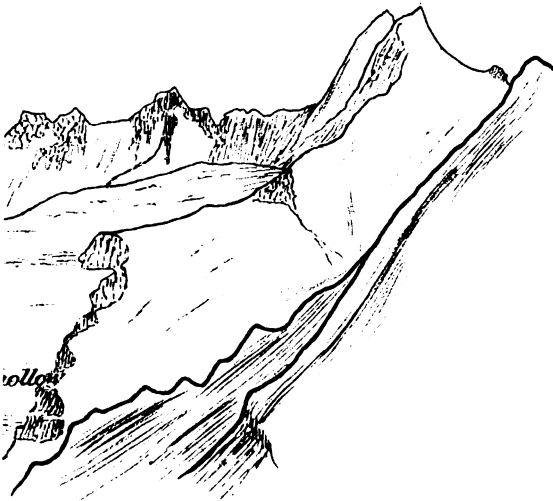
Deep 1

st Pass.)

Dych Tau



Shkara



collo

cut the hillside we lose the track. Great difficulty in hauling the horses out of the second gully. Track has to be dug with the axes. Recover faint path leading up and over spur into valley of W. Skenes Skali. Horses perform incredible feats; one irremovably large fallen tree lifted sufficiently by united effort for them to pass under. Finally, by cleverness of beasts and goodwill and handiness of their drivers, reach at dusk commodious beech grove within reach of water of Skenes Skali. Roaring fire and luxurious night in sleeping-bags, broken only by a false alarm of a bear among the horses.

25th.—Wonderful wade through a valley of flowers from 6 to 12 feet high, which entirely conceal a laden horse. Path at times hardly traceable. Great difficulty in torrent beds. The final climb to the Noshka pass is so steep that a man would naturally use his hands; yet the horses got up, though without their loads. From height N. of pass I obtained an admirable view of chain. Two bold rock peaks and small glaciers, then sudden breakdown to a pass like the Monte Moro, which must lead on the N. side onto the glacier in front of my sketch of view from the Stuleveesk pass (see 'Central Caucasus,' p. 381). Descent short and comparatively easy; reach at 6 P.M. birch-bark shelter on bank of E. Skenes Skali after twelve hours' very slow and toilsome progress.

26th.—Reach Goribolo ridge a mile N. of its lowest point by easy track. Magnificent panorama from the grass crest over which the path passes. Ushba, Shkara, Dychtau, and top of Koshtantau on one hand, two passes (Edenis Mta and Pass Mta) opposite with Rion sources. E. the great peak of the Upper Uruch, at the head of the glaciers of the Sopchetura, the first tributary of the Rion; Burdjula and Adai Choch. (See sketches.) The mountains descend in curved ridges to the woods of the Rion basin. Shoda, a very imposing isolated glacier-capped summit in S. lateral chain. Resolve to climb it from Gebi, in pursuance of A. W. Moore's intention in 1868. In that year, owing to broken weather, we had only glimpses of the chain from Gebi to Betsho. I have now seen in perfection the wonderful landscapes I thought I had missed for ever, and secured rough outlines of both sides from the Karagam pass to the Zanner, which, with M. de Déchy's and Donkin's photographs, ought to settle the relations of the glaciers S. and N. of the watershed.

Descend leisurely over pastures bright with golden crocuses to the Rion. Herds of horses and cattle from the

N. side feeding. One Karatchai Tartar, on being asked how many horses he had brought over, replied 'Sto'—a hundred. Four hours down valley from Sassagonelli to Gebi; thirteen hours in all from bivouac.

At Gebi new church and guest-house, but old, inquisitive crowd; count over fifty in close circle in small room, and then employ François and Joseph as 'chuckers out.' A ragged ancient is discovered in inner room, and his cloak on the sleeping-bench. He asserts his right to stay there as guardian of the local archives, which are deposited in a padlocked cupboard. Forward his cloak out of window and himself out of doors, and send a decided message to the Starshina that I mean to be left alone. These measures succeed. An intelligent villager is appointed our purveyor, and procures meat, poultry, good wine, potatoes, and even sugar. Parted the best of friends with our Jibiani horsemen and their admirable beasts. Two of the men were thoroughly good fellows, and their pink tunics, black bashliks tied up in turbans, and handsome faces, will remain a pleasant foreground in my memories of our forest wanderings and camp-fires.

27th.—Festival. Village green bright with groups of women in red or blue robes, with long white scarves falling from the head over the back, and many rows of amber beads. Where do they get the amber? Some very handsome girls. Found churchyard full of basketfuls of eatables—the fruit of the earth. Priest blessing them inside. Recognised and shaken hands with often, which shows that if the Gebi folk stare hard it is to some purpose! One of our old porters inquired after 'Paul and Franski.'

Set off in afternoon to sleep out for Shoda. Pleasant path through beech forest to pasturage at foot of limestone crags in glen on E. side of mountain. Grand sunset view of Adai Choch group. Two peaks new to me visible N.W. of Adai Choch; probably near head of Skatykom valley—one a doubleheaded rock-peak, the other a blunt snowy crest, which holds the sunset last of all. They appear to be as high as, if not higher than, Adai Choch itself. Cold wind drives us into well-built birch-bark hut; but we pay dearly for our shelter.

28th.—Morning doubtful. Up steep freshly-mown slope to ridge springing from Shoda; traverse rough ground under crags to base of chimney between them and the peak. Crumbly shale chinney to ridge, and easy climb along it up to the glacier-cap. The ice falls in avalanches down inaccessible cliffs

into the glen W. of ours. About 600 feet of snow-slope to the top. Mists unluckily prevail, and the panorama is lost—the only view lost in this year's journey! The Russian measurement, 11,128 feet, seems to me low. The aneroid showed 7,400 feet of difference between the top and Gebi, which would make the peak what it looks—11,900 feet. It has, I believe, been reached by natives. We found hay, obviously from a hunter's shoes, on the ridge below the glacier. Descend directly steep slopes from ridge to head of glen. Fine views as mists clear; seven hours up from Gebi, five from Kosh.

29th.—Ride to Oni. Great, but light sun-heat in middle of day. No horses at Oni. Arrange with an old Shylock-like Mingrelian to bring them next morning at daybreak. Fine view of our old Karagam Pass from bridge. Warm night. Sleep in balcony of wretched Duchan. Disturbed by dogs.

30th.—Horses not collected till 7 A.M. Down Rion valley for four hours. Large gangs of natives at work on road. Carriages are to pass the Mamisson next year! They will not continue to pass it for many months unless the engineers pay more attention to the protection of the road from floods. Long dull ascent to Nihortsminnda. Farewell view of Adai Choch group, followed by a delightful ride through the romantic Nakarala forest; gigantic pines and planes and beeches, with an undergrowth of bay, box, laurel, and azalea; rocks and pools, like Fontainebleau. Sudden view of the lowlands and mists under sunset glow from gap at the south-western edge of this great limestone plateau. Steep and long descent down a streak of boulders called a road; then by zig-zags in forest. 'Gostinitza London' and railway station of Khibouli at 9 P.M. Gale at night rocks house.

31st.—Line made for coal traffic; not yet open for passengers. Ride of 35 versts over hills and commons to Kutais. Visit monastery of Ghelati. Farewell view of Shkara and Tetnuld from last hill above Rion. Through pomegranate hedges and dusty streets of Kutais to Hôtel de France. Part from our interpreter, who had served me admirably throughout.

In this second portion of my journey I fairly tested the chances of the traveller with no government papers or special advantages. We got on excellently. I come to the conclusion that the prospect of pay, something in excess of Russian prices, is often quite as efficacious as official documents in procuring speedily horses or provisions; and that *as a rule* the private traveller with a competent interpreter is under no

disadvantage. The exception is in such a journey as that from Naltshik to Urusbieh, where official help doubtless saved us delay. In *fine weather* sleeping bags are an excellent substitute for a tent.

Left, in a thunderstorm, by the evening train for Batoum. *September 1st.*—Mists low on hills. Hothouse atmosphere. Embarked on Austrian-Lloyd steamer for Constantinople. Guides went on by sea to Venice. I returned by Varna and the Orient Express.

I have left myself, I find, too little room for the generalisations from my recent experiences with which I had meant to conclude. I can state but a few. I do not think much of the necessary difficulties and hardships of Caucasian travel. M. de Déchy has conclusively shown the possibility of transporting backwards and forwards, even across the most icy and formidable portion of the great chain, baggage largely exceeding in bulk that necessary to the ordinary mountaineer. We found the natives, on the whole, good travellers when once on the road. I believe, and Mr. Peacock, H.B.M.'s Vice-Consul at Batoum, who knows the mountains of the Caucasus better perhaps than any Englishman, entirely confirms me, that most of Dent and Donkin's difficulties were owing to their worthless interpreter. And my enquiries in the country all lead me to the conclusion that the attack of fever, from which the second party of Alpine Clubmen in 1874 suffered, was an unfortunate accident, due mainly to their having been entirely off their guard. This was A. W. Moore's own opinion. Soukhoum Kaleh is, no doubt, the most dangerous point of entrance and exit; but my German interpreter had made several journeys from that port into Abkhasia in which neither he nor his companions had suffered.

The Caucasus, in my opinion, has in many ways advanced in the last twenty years, and is now ripe for Alpine Clubmen. *Alpine Clubmen* I have written; but I mean men of the stamp of the early explorers of the Alps, accustomed to rough lodging and living—travellers as well as mountaineers. To climbers who have seldom been beyond the 'three centres,' who consider Cogné and Pontresina far off, who delight in *tables d'hôte* and depend upon huts, who have made a 'recrd' by being nursed by two great guides up some twenty great, and perfectly well-known peaks, it would be cruel to recommend the Caucasus. Caucasian explorers must, like the early explorers of the Pennine Alps, the Tyrol,

and Dauphiné, be men able to take care of themselves in difficulties, ready to take their share of petty privations and of hard work, even to exercise their own judgment in critical moments. I lay stress on the last point, for I feel sure that the majority of guides will at first be inclined to reason from their past experience without making sufficient allowance for the altered conditions of a new field of action, and that their decisions will need the revision of men on their guard against the possible danger of trusting to what Mr. Dent has called 'acquired instinct,' where it is no longer applicable.

I had great good fortune in weather and health. Ill luck, first and worst, in the condition of the peaks and passes, owing to an abnormal winter and unsettled early summer; next, in my strongest guide being frostbitten, and in the want of a climbing companion.

The winter, I was assured by good observers, such as Dr. von Radde and Mr. Peacock, had lasted two months longer than usual. There had been no heat in Tiflis up to the middle of August! The consequence was that the glaciers were coated, and the rock-peaks laden with snow in the worst possible condition, such as one sometimes finds in the Alps in June. In an ordinary season and with the support of all my companions, we might have fairly hoped to conquer not one but three of the great peaks. As a climber (and among virgin snows I found the old passion as strong as ever) my share of success does not satisfy me; but, on the other hand, I saw more scenery in perfection, acquired more topographical and general information, and suffered less from fatigue or hardship than I had imagined possible. My first object was to enjoy myself. In that I succeeded. My second was to remove some bugbears, and to show the younger members of the Alpine Club where, if they have the same tastes and energy as its founders, their work now lies; and how they should set about it. Whether I shall succeed in this or not it is for them to decide.

The imperfections of the illustrations will be obvious. They are literal reproductions of rough sketches of my own of scenes not included among M. de Déchy's photographs. With the view published in this Journal (vol. xii. p. 318), they afford an almost complete panorama of the southern side of the main chain from Tetnuld to Adai Choch. In a subsequent number I hope to give a sketch-map, showing, with some approach to accuracy, the relations and dimensions of the peaks, passes, and glaciers of the great central group.

THREE NEW ASCENTS IN THE BERNESE OBERLAND WITHOUT GUIDES.

BY A. LORRIA.

ON July 19, 1885, my friend Lammer and I arrived in Grindelwald. Unluckily the weather seemed to be dead against us; the clouds hung heavy and low right down to the valley, and our prospects were not very cheering. We speculated as to whether we would be able to carry through our plans and whether our forces—for we intended to climb without guides—would be sufficient for the heavy task we had imposed on ourselves. On the 25th we went up to the Bergli hut, and next day did the Jungfrau. On the 27th I remained in the hut owing to slight indisposition, while Lammer alone made an attempt to climb the Mönch. That day Herr Burckhardt, of Basel, with Peter Schlegel and Jössi ascended the Gross Viescherhorn, and on their return could not find words capable of describing the magnificent view they had enjoyed from this summit. This turned our thoughts towards a scheme we had planned in Vienna, of climbing the Hinter Viescherhorn (13,190 ft.). Since Dr. Häberlin's unsuccessful attempt on July 14, 1871,* the peak had not, so far as we could find out, been again attacked. Besides, the Hinter Viescherhorn was the last virgin peak in the Bernese Oberland which is over 4,000 mètres (13,124 ft.) in height.

So on July 28 we started for this ascent at 4.20 A.M. I take this opportunity of pointing out that it is now usual to cross the Vieschergrat, *not* at the point where the enlarged Federal map has the name 'Unter Mönchjoch,' but rather to the S.E. of the hut, at the point marked 3,560 mètres. Formerly, as Peter Kaufmann informed me, the passage was effected to the W. of the point marked 3,630. We crossed the ridge by the depression *farthest* to the E., which was perfectly easy, and brought us nearer our peak. At 4.50 we stood on the ridge. Descending slightly, we kept to the left, and traversed at a level along the slopes of névé; but under the Walcherhorn (which in some copies of the Federal map is *wrongly* called Almerhorn) these became crevassed, and we were gradually forced down on to the Ewig Schneefeld. When we reached the foot of the Hinter Viescherhorn we struck up again to the left, over slopes of névé, the steps cut the day before being still in part visible. We found

* *Jahrbuch des S. A. C.* vol. viii. p. 160.

ourselves now in a veritable labyrinth of crevasses, but were able to avoid the largest séracs by making long zigzags, and thus reached the great *cirque* of rocks and ice which lies between the ridges descending from the Gross and Hinter Viescherhorn. Dr. Häberlin had tried our peak by the S.W. ridge, and had reached a rocky tooth which, when looked at from the Ewig Schneefeld, has the appearance of being the highest point. Lammer wanted to try this ridge again, but I opposed this idea, for I wished to climb up to the gap between the two peaks and make the ascent from that point. Mounting over gently inclined slopes of névé, we gained the foot of the wall leading up to the gap, which, as it does not seem to rejoice in any name, may perhaps be called the Vieschersattel, as it is the lowest point between the two peaks. From the Sattel there runs down a rocky rib which is separated from the big bergschrund by a steep ice wall, on which the traces of falling stones are very plain. The steps cut by our predecessors the day before could still be traced, but had nearly melted away. After hoisting myself over the bergschrund I began to hew a staircase in the hard ice, and when I reached a crevasse running parallel with the bergschrund I made myself secure, and Lammer came up in my steps. After crossing three similar crevasses, and cutting many other steps, we got on to the lower end of the rocky rib mentioned above. The rocks were easy though rotten, and at 9.20 we were on the Sattel. A remarkable sight here met our eyes. Right away stretches the table-like upper névé of the Walliser Viescher glacier. This is bounded on the N. by the ridge between the Gross and the Klein (or Ochsenhorn) Viescherhorn; to the E. it falls in precipitous slopes of rock and ice down to the Upper Eismeer; to the W. it is limited by the ridge between the Gross and Hinter Viescherhorn; and to the S., first by the rocky east ridge of the Hinter Viescherhorn, and lower down by a tangled mass of séracs which leap down in a wild icefall towards the Walliser Viescher glacier.

Close to the Sattel there is a hollow in the level and uncrevassed snow plateau, in which we spent half an hour sheltered from the wind. Then striking away to the E., down the plateau, we were able to fix exactly the position of our peak, which had the appearance of a snow cone crowned by a rocky ridge. We climbed up over the E. ridge, cutting some steps in the ice above the inevitable bergschrund, and then clambering up rocks without difficulty to the summit of our peak (13,190 ft.), which we gained at

10.15 A.M. Now we saw Dr. Häberlin's rocky pinnacle, which is to the S. of our peak (about the place where on the map the S.W. ridge branches off), and at least 50 mètres (= 164 ft.) lower. From the Klein Grünhorn the difference seemed even greater. It seemed to us that the ridge from our peak to the lower point might very well be passed.

The view that was spread before us took in all the great mountains from Mont Blanc to the Ortler and Oetzthal groups. Its characteristic feature was that it was impossible to see any valley; snow and rock alone met the eye. After building a cairn, in which we left our cards, we began the descent at 11.30, first over the N.W. ridge, then over the easy snow slopes to the right. A jump over the bergschrund brought us to the great plateau, whence in a few steps we regained the Sattel at 11.50. Another ascent over snow and across a small bergschrund led us to the rocky ridge which runs up towards the Gross Viescherhorn. The rocks are firm and give good hold, so that it is possible to climb up them very quickly, and at 12.30 we had reached the summit of the Gross Viescherhorn. The view was most superb; a view such as even in the Oberland one rarely enjoys. It has been fully described by Mr. Moore.*

At 1.15 we began the descent by way of the N.W. ridge. Peter Baumann had told us that this ridge had not been done, as Messrs. Chater and Hooper with him, and Peter Kaufmann, had not reached the summit by this route,† but by some other, possibly the S.W. ridge, certainly *not* the N.W. one. The rocks were very rotten, and after circumventing (on the W.) the first tooth, we were obliged to keep mainly on the W. flank of the ridge, sometimes crossing over to the other side, sometimes on the crest itself. We crossed several ice couloirs by means of steps, and so reached the point at which the rock-ridge ends. What we saw here was not very pleasant—a long descending snow-ridge with a corniche. We had not the time to undertake such a long piece of step-cutting downwards, and the snow was in a very untoward condition, for the upper layer, warmed by the sun, slipped away at the slightest touch, and exposed to view the hard ice below. So with heavy hearts we turned back. A fortnight later we were not displeased to hear that another member of the Alpine Club had tried to ascend this ridge, but had failed because the guides were unwilling to under-

* *Alpine Journal*, vol. i. p. 243.

† See *Alpine Journal*, vol. i. p. 319.

take the task of cutting steps in the then condition of the ice. So we left the solution of this problem to someone else; and it can certainly be solved, for we proved that the rocks can be done, and the snow-ridge is by no means impassable. The rocks of the S.W. ridge are without doubt more difficult than those of the N.W. ridge, and up the former lies the usual way to the peak. We were unable to ascertain whether the Gross Viescherhorn was accessible from the Grindelwald glacier or not; but it seems to us that this climb might certainly be achieved, though it might be one of the hardest in the Bernese Alps, while the lower bit of the ascent is much exposed to great avalanches of stones and ice.

There is, however, one observation of some orographical value which we made. It is that the Gross Viescherhorn does *not* lie on the ridge which forms the boundary between Bern and the Valais (as shown on the Federal map)—that running from the Walcherhorn to the Ochsenhorn—but that the N.W. ridge meets the main ridge at the second rocky tooth on the former. Later we saw this still more clearly from the Schwarzegg hut.

At 2.45 we once more stood on the summit of the Gross Viescherhorn, and in half an hour regained the Sattel, where we rested a quarter of an hour. We were rather anxious about the state of the ice wall, and still more so when on reaching the end of the rocky rib we saw on all sides snow slipping down, streams rushing along, stones here and there whizzing by. We halted on the last rocks to put on our *crampons*. The steps cut in the morning had almost disappeared or were filled with water, and so I had to cut fresh ones. We worked our way down slowly, but better than we expected. The various crevasses were crossed with care, and finally we stood just above the great bergschrund. It was impossible to see how wide it was, for an overhanging bit which we had climbed over in the morning was in the way, and we dared not go on it now the sun had been shining on it all the day long. It would have taken a long time to cut through it, so I made a leap in the air while Lammer held the rope. Now came his turn. I wanted to advise him to slide down, meaning to pull him over by the rope when he was on the edge of the schrund; but hardly had he heard, to his joy, the word 'slide' than, without waiting for any further directions, he slid down into the crevasse and disappeared, as I had not had time to haul in the rope. A pull, the rope tightened and did its duty, my friend soon reappearing from his unpleasant quarters.

It was 5.15 P.M. We had no further adventures; but, as so often happens at the end of a hard day's work, we found it very trying to toil up the gently inclined soft and sloppy slopes of snow, and it was not till 8.45 P.M. that we re-entered the Bergli hut, overjoyed at having successfully accomplished our intended ascent.

On August 12 we found ourselves once more in the same club hut, and though a furious storm had raged throughout the night, we started on the 13th at 5.45, reaching the Mönchjoch at 6.15, and struck down the Ewig Schneefeld, keeping along the flanks of the Trugberg. Our progress was rapid, but some way on, when we turned our steps towards the middle of the snow-basin, we came on some unpleasant country, for the ice was traversed by deep parallel furrows, like the forehead of an old seer. Near the Klein Grünhorn we turned to the left, and after a reconnaissance of a quarter of an hour mounted over the not very steep snow slopes which are dominated by the Hinter Viescherhorn and the Klein Grünhorn. Séracs sometimes forced us to zigzag, and crevasses often seemed to bar the road, but there was always a way out. Once we had to cut down into a crevasse, another time we had to balance ourselves on an icy ridge between two crevasses, or again to cross an overhanging bit of snow with many icicles hanging down from it, which broke away and fell into the depths. Our icy way was by no means monotonous or easy. Out of the snow there rose two islands of rock, the side of which seemed very bad and steep, so that Lammer proposed that we should not reach the ridge, as I wished, by the upper rocks, but climb up to the upper plateau of the snow basin, and so gain the crest of the ridge by the ice wall. This almost looked as if it would be the best plan, but we resolved to try my route first of all. After cutting a dozen steps or so we reached the rocks, which turned out to be very good, so that we soon climbed them, and stood on the ridge, descending W.S.W. from the Klein Grünhorn. This ridge is not shown on the Federal map, though it is conspicuous and sharp. We began by walking up gently inclined snow slopes, where the ridge was wide, until we came to the place where it narrows and becomes a steep snow slope. Then came a long ridge of ice, gradually becoming steeper, which finally turned into a rock ridge. The snow was in good condition, and our *crampons* saved us the trouble of making steps. Steeper and steeper was the ridge, so that by means of a few steps in red snow we descended to the right on to the rocks which stretched

up to the summit. The *crampons* were now taken off, and rapid progress made. A rather sharp rock ridge, and at 11.10 A.M. we were on the highest point of the Klein Grünhorn (12,884 ft.).

I need hardly say that the view was very grand. My thermometer stood at 12.5° (Centigrade). The storm had subsided, though a certain dull shining of the sun did not look very well. The time flew rapidly by on our airy seat, where there was not very much room; indeed there was so little on the highest pinnacle that one could only stand on it by balancing oneself. After building a cairn and putting our cards in it we started down at noon. The weather became rapidly worse, clouds and mist poured through the gap of the Lötchenlücke; there was clearly no time to be lost. Just as we left the ridge the clouds came upon us, so that we could not see our way, and flakes of snow began to fall. We managed to find the steps below the rocks, and our track lower down guided us through the *séracs*. We went down pretty quickly, so as to have the *séracs* behind us before the snow had quite obliterated our footsteps. Lammer suggested that in order to avoid these *séracs* we should traverse the upper snow plateau, at the height of about 3,600 mètres, to the ridge of the Hinter Viescherhorn and descend to the Ewig Schneefeld; but we did not venture to strike out a new way in the thick clouds. Two days later we saw that this route would have been easier than the one we actually took. At 1.45, having followed our morning's track, we stood on the Ewig Schneefeld. We saw the Mönchjoch for an instant through the clouds, determined its direction by means of the compass, and then mounted towards it, unmindful of the clouds and falling snow. The way seemed as if it would never end, especially as we could see nothing, and could not therefore tell how fast we were getting on. Gradually the storm subsided and allowed the great peaks to peer above the clouds, and when we reached the Mönchjoch at 3.35 P.M., the sun came out again. We met a party here, the gentleman in which seemed to be an inexperienced walker, for he had torn his knickerbockers and hurt his thigh with his ice-axe. He clung to his axe, however, with such tenacity that it seemed as if he wished to commit suicide the next minute. After ten minutes' rest we went down to the hut and crossed its hospitable threshold at 4 P.M.

The next two days were taken up by the ascent of the Mönch from the Eigerjoch, and the descent to the Eggisch-

horn; but on August 16 we were once more at the Concordia hut, with our thoughts fixed on Kamm.

‘Kamm! Kamm! What can that be? I know no peak of that name,’ many of my readers will exclaim, even though they have made an expedition up the Great Aletsch glacier. As during the long winter evenings Lammer and I discussed, in Vienna, our plans for the summer, our attention was more and more drawn to this hitherto unclimbed peak, which is so conspicuous on the Federal map. Lammer was rather incredulous about it, for it seemed to him impossible that a peak so near the Concordia hut, where so many enterprising peak hunters have slept, could have escaped notice if it was at all a fine summit. But I felt irresistibly drawn towards this mountain, and, to Lammer’s amusement, I could not keep my thoughts from flying towards it. It was therefore only natural that the first time we crossed the Mönchjoch our looks should be turned in the direction of Kamm. Sure enough there rose up a bold rock-peak, from which jagged ridges ran W. and S.W. To the E. the peak overhangs, while to the N. the wall from the summit to the base is quite sheer. That was my idea of Kamm, and my confidence in the Federal map was completely justified. When we went over the Mönchjoch on August 15 to the Eggishorn we had time and opportunities enough of studying our peak and discussing the way up it.

The W. ridge, of which the Faulberg is an independent though a minor spur, looked very long, and on it there were many evil-looking bits; the secondary ridge, too, which runs up from the site of the old Faulberg hut to the main W. ridge, seemed long and fatiguing, while the N. wall is either inaccessible or only to be conquered after overcoming the greatest difficulties. The E. ridge is probably very hard to get at, and on that side the peak overhangs. There were, therefore, only two routes remaining—either up the ridge which by many steep steps rises from the Schönbühl glacier, and thus attack the peak from the S., or up the great rocky rib which runs up from Inner Schönbühl to the little hanging glacier under the summit. This latter route seemed to be the best, though there was one steep bit which troubled us much, and many doubtful bits besides. The map gives a good representation of the ground, but the little glacier is placed rather too high, and thus the not inconsiderable S.W. flank of the peak is totally ignored. Then, too, it does not mark the snow fields between the W. and S.W. ridges. The sharp summit between Kamm and the Schönbühlhorn, at the point

where the ridge sinks towards the Grünhornlücke, is quite accurately placed on the map, but no height is assigned to it. We could not make sure whether this bold double-toothed pinnacle was higher than, or of the same height as, Kamm; in any case such a striking and orographically important summit deserves a name and a conqueror. The height of Kamm itself is 12,697 ft.

We started at 6 A.M. only on August 17 from the Concordia hut, for we had no long tramp over glaciers before us, and we underrated our peak. As we did not care to carry much we only took with us lemonade, bread, butter, and one empty bottle to leave on the summit.

We first went down to the glacier and kept along the edge of the moraine, but as it was not easy to get through it, it was 7.15 A.M. before we reached the grassy slopes of Inner Schönbühl. Then we mounted up by grass and débris to the E. side of the rocky rib we meant to ascend by, and gained the crest without difficulty by way of a gully. More débris and grass followed, numerous traces of chamois being found all about. The ascent became steeper than before, but was so easy that we hoped that we had discovered a very accessible view point, for a glance at the map showed that it must command a very fine view. All at once the ridge narrowed and the steep bit we had seen from below revealed itself as a *gendarme* of the worst kind. First we had to crawl over several great slabs, then came a deeply cut notch, and we were at the spot where the difficulties commenced. We might perhaps have climbed down to the left over a very steep wall and then up an extremely bad crack; but it was not certain that this would go, and the rock was so rotten that we preferred to try to force the steep bit before us, as the rock was *fest* though the slope was over 80°. We traversed first to the right as far as the last flat shelf, beneath which the rocks fell steep and smooth right down to the glacier. Lammer took off his shoes, of which, as well as his knapsack and his ice-axe, I took charge. The rope was uncoiled and fastened round us. He then set about the climb, while I placed myself in as firm a position as possible, securing the rope as well. It required the nicest observations to find hand- and foothold, but at length Lammer came to a spot where he could again stand upright. He then hauled up the bags and ice-axes by means of the rope, though he could not manage to find any resting-place for them, and was obliged to press our knee against the rock so as to hold the rope while I was coming up the bad bit. When we were once more together

he clambered to the left till the crest of the ridge was regained. The great slabs of which the ridge was made up overhung at this point on the left. Luckily there was a crack into which Lammer managed to wedge his knee, then came up the bags and axes, followed by myself. Now came the very worst bit of all, such as we never came across again. The ridge not merely overhung, but its inclination varied from 70° to 80°. A little to the right there was a shallow gully. Lammer had very hard work with his hands, his feet, and his knees, and groaned aloud in consequence of his efforts. I secured myself as well as I could, but as my hold was very precarious I don't think that I could have helped being carried down if the rope had had a sudden strain put on it. At last Lammer found a cleft in the ridge in which he could squeeze his fingers. Another instant and he was astride of the ridge, his right leg dangling in the air over the overhanging rocks, his left closely pressed against the rock; there was no hold whatsoever. Once more I tied the bags and axes to the rope, and threw the package up to him. Our rope was 15 mètres (about 50 feet) long, but nearly 3 mètres of it (9½ feet) hung clear of the overhanging rocks. Lammer got hold of the things, but it was very hard for him to let the rope down to me again, for when he dangled it down it slipped away from the ridge to the right or to the left, while I in my insecure position was unable to make any great efforts to catch it. Finally it hung just above me, and I resolved to climb up without it until I could get hold of it. It was a very severe bit of work, and my muscles were strained to the utmost, as the rock was extremely difficult. After some anxious minutes, however, my hand caught the rope; and it was high time, for my shoes were of no use, as the inequalities in the gneiss were very slight, so that I had to trust myself entirely to the rope. I did not venture, however, to let myself swing with the rope to the left quite clear of the rocks, as we had done with the bags. At last I too was over this difficult bit, and also astraddle of the ridge. Now came some level bits, but on the right there was no hold for the feet, and on the left the rocks still overhung. So we had to work our way along on the right, holding on with our hands to the crest of the ridge, our feet being in the air. While we were unroping the things Lammer's axe became detached, and would have been lost but for a lucky catch with my right hand. We had next to overcome several places where the ridge overhung like a thin bent plank, till we came

to a notch and got over on to the left flank of the ridge. Some more not very easy bits followed, then matters became easier, and we gained a wide shelf on which we rested for twenty minutes. We had taken from 9 A.M. to 11.15 A.M. to get over the *gendarme*, a height of only 50 mètres (164 feet). It was one of the very hardest bits I have ever done.

The ridge now became shattered though not difficult, and we soon came to a broad crest covered with huge slabs arranged like a staircase, followed by *débris*, up which we went easily. The S.W. ridge is on the whole very broad, and is only in that one bit so marvellously sharp. Some patches of snow and tiresome stones offered an easy way to just under the little hanging glacier. We had wrongly feared that we would here meet with difficulties. There were only some nice little scrambles, and at 1.30 P.M. we were just under the very steep ice stream, halting here for twenty minutes. A rocky ledge led round this to the right, and thus we gained the glacier without difficulty. There were crevasses, and a *bergschrund*, and a steep ice slope on the glacier, so that we put on our *crampons* in order not to lose any time in step-cutting. We made for the ridge falling to the S. from the summit and had to cross the *bergschrund*, after which Lammer got on some very slippery slabs, while I kept as far as possible to the ice and then climbed up some red rocks. A shallow ice gully gave us some trouble in crossing, but after that the ascent became easier and easier along the rotten rocks of the S.W. flank till we reached the W. ridge, and in a few steps the highest point of our peak. This was the way in which once more we had conquered a haughty peak after a hard struggle.

As we had expected, the distant view did not differ much from that gained from other points in the Bernese Oberland, and besides there were higher peaks all around us; but the view over the Aletsch and Viescher glaciers, and the spectacle of the Jungfrau, Mönch, Grünhorn, Viescherhörner, Aletschhorn, and Finsteraarhorn was finer than from any other point in this district—at least, in our opinion. Kamm occupies such a central position that it enables one to grasp all the chief characteristic features of the Bernese chain.

We had again the pleasure of building a cairn and depositing our cards therein. As we had only reached the summit at 2.35 P.M., and at that time were only aware of one way down, it was very late in the day (3 P.M.) when we began the descent. Hence we went down as fast as we could, though the slippery rocks and the steep ice slopes of the

hanging glacier delayed us slightly. Then we ran down the débris, and so came nearer the dreaded bit of the ridge which had given us so much trouble on the way up. But we now found a way of climbing down to the right, and were very ready to try this or any other way than that by which we had come up; for we neither of us cared particularly about facing the difficult and even dangerous descent of the *mauvais pas*.

We had straight before us a series of rocky slabs and ledges, and gullies which compelled us to make many a zig-zag. Farther down we were forced by increasing difficulties to traverse to the right; but these difficulties were not anything compared with those on the *gendarme*, though we had several bad bits to pass. At length we reached the snow field (between the W. and S.W. ridges) which is streaked by the avalanches and stones from the Kamm glacier, and which is not marked on the map. When we looked up at the wall down which we had come it seemed impossible, for from below one cannot distinguish the small clefts in the rocks or trace out all our twistings and turnings, and the wall seems therefore quite impracticable. We slid down the snow field, turned, by zigzags to the left, a rocky precipice over which sprang a fine waterfall, and so came once more to Inner Schönbühl. As daylight vanished we entered the Concordia hut, which was occupied by twenty-four persons, and as we were the last comers we could only find room on the floor under the guides' quarters. They offered us room in their quarters, but as they deserved rest even more than we did—for they often have to drag not merely themselves but their 'Herren' up a high peak—we declined their friendly offer.

We had not therefore much chance of repose after the very severe exertions and anxieties of the day, so that next day we contented ourselves with climbing the Finsteraarhorn by the ordinary route. On the ascent we were troubled by clouds and by an icy wind which froze my lemonade, and on the descent we encountered a furious snowstorm.

Our climbing in the Oberland came to an end with the two expeditions I have just described, as the snowstorm of August 18 had covered all the great mountains with a thick white coat. The next day, as we were leaving this group, the sun shone out from the dark blue sky and allowed us a farewell glimpse of the district in all its wonderful beauty and splendour. We had spent there many pleasant hours in the purest enjoyment of the grandeur of Nature, and in satisfying our longings for a life of freedom and adventure. *Auf Wiedersehen!*

THE PREVENTION OF SNOW-BURNING AND BLISTERING.

BY G. SCRIVEN.

MOST, if not all of us, who have spent much time among the high Alps have suffered in a greater or less degree from the effects of 'snow-burning.' In its aggravated forms this becomes a serious drawback to the enjoyment of climbing snow mountains. To find one's face smarting and stinging, as if pricked with the finest needles, while tramping over some glaring snow field; to feel in the evening as if a red-hot iron had been carefully passed over the skin of the face; to awake in the morning with the sensation as of a stiff paper mask gummed over the countenance—these are some of the commonest annoyances consequent on snow-burning. Nor is this all. The subsequent results are often even more distressing, certainly more unpleasant, to contemplate. After a time the skin cracks, and its tattered shreds tempt the sufferer to pull and scratch them to the further ruin of his already dishevelled complexion; the lips swell, and frequently become blistered, causing not only deformity but much pain, while the pipe of peace must be laid aside. Specimens of these various stages of facial decay are common objects at the tables d'hôte of the higher Alpine hôtels, and, it must be confessed, are often far from pleasant objects of contemplation during these social gatherings.

Many remedies and preventives have been used to obviate this torment. Vaseline, cold cream, zinc ointment, &c. &c., all have their advocates, and all more or less fail to accomplish their object. Some men have recourse to veils, which are tolerably effectual, but their stiffness renders the remedy nearly as bad as the disease.

Having tried most of these devices with the usual partial success, it occurred to me this year to experiment with a substance which has only been pressed into the service of medicine quite recently, but has already become most popular as a basis for ointments of various kinds. 'Lanolin' is a fat possessing many remarkable qualities, some of which render it peculiarly adapted to the purpose of protecting the skin from burning and blistering. It is prepared from sheep's wool, and is in fact the natural grease which lubricates the hair of all animals and the feathers of birds. It is readily absorbed by the skin, and is capable of combining with its own weight of water. The property of combining with water renders it much more pleasant than other fats to use on the skin, especially when perspiration is present; while by penetrating and lubricating the outer layers of the skin it renders them better able to resist the fierce attacks of snow glare. In order to make Lanolin convenient for this purpose it is better to use it in combination with some less sticky material, and by the addition of a certain tincture the mixture becomes most valuable also for healing such small cuts and scratches as often fall to the lot of climbers. The following is the formula of a preparation which I have used this year with great comfort:—

R.	Tinct. Calendulæ officinalis	...	...	...	3j.
	Unguenti Cetaceæ	...	...	...	3j.
	Lanolini (Liebreich)	...	...	...	3j. M.

The best way to carry this is in a round tin box, so that the ointment can be used on the snow fields; for it should be remembered that it must be used before the exposure to snow, as the mischief if once done cannot be repaired. The ointment should be applied all over the face on the night before a climb and gently rubbed in; a fresh coat should be rubbed in before starting, and frequent applications of it may be made during the day. On returning from a climb the face should be washed with the hottest water which can be borne, and a small quantity of the ointment again used.

It is not pretended that this is an infallible remedy against all burning on the snow; but from personal experience, as well as from that of friends, I can promise that much, if not all, of the annoyance of burning and blistering on the snow will be avoided if the above directions are followed; and, though the skin may come off in patches, and its colour become darkened, there will be fewer ghastly faces at tables d'hôte, and much execration of snow fields will be avoided.

A word with regard to masks. The ordinary linen mask is very heating and uncomfortable, but one made of the thinnest woollen material is effectual in protecting the most delicate skin, and can be worn with little discomfort. This form of mask was used by a lady in whose company I spent a long and trying day on fresh snow this year, and, with the Lanolin ointment, entirely obviated all unpleasant effects of the snow glare.

ALPINE ACCIDENTS IN 1887.

If we were to pay serious attention to the numerous sensational articles and letters which have appeared in English and foreign newspapers in the course of the past summer, we might be led to imagine that the number of Alpine accidents had been unusually great, and that the main cause of these mishaps was the fact that the parties in question were unaccompanied by guides. The baselessness of the latter statement is clearly shown by the narratives given below. As to the former, it may at once be allowed that the deaths in the Alps were unusually numerous, and that a remarkable number of narrow escapes have taken place. But it must never be forgotten (the distinction has, we believe, always been made in these pages) that there is an essential difference between accidents occurring above and those occurring below the snow-line. The former are, strictly speaking, Alpine accidents, which could only have taken place in the high Alps, and which are therefore associated in the closest way with the noble pursuit of mountaineering above the snow-line, whether with or without guides. The latter are, as a rule, mishaps, which might have happened anywhere, though they did happen in the Alps, and which, therefore, have only a casual connection with the subject of mountaineering. No doubt every accident in the Alps, in the past or in the future, has been and will be due to avoidable causes. No doubt, also, despite this fact, accidents will go on happening in the Alps, as in a factory, through carelessness.

But, as far as mountaineering proper is concerned, those above the snow-line alone suggest or enforce lessons to be laid to heart by future climbers; while those below the snow-line, in themselves most sad and most deplorable, are, for purposes of warning and instruction, absolutely useless. Hence the care always taken in these pages to discuss at length and to tabulate all accidents above the snow-line, while mentioning only a few of those below that limit. Hence, too, the desirability, nay, necessity, of drawing a distinct line between Alpine accidents and accidents occurring in the Alps, for a mountaineer is a very different sort of person from a tourist.

The Alpine accidents of 1887 are, so far as we are aware, three in number.

The earliest of these in point of date was also the most striking. This was the death on the Jungfrau on July 15 or 16 of six young Swiss, the number of lives thus lost being greater, we believe, than in any other Alpine accident on record save that on Mont Blanc in September 1870, when eleven perished. This is therefore the greatest loss of life (at least, of travellers' lives) which has ever happened in the Swiss Alps. The facts of the case, so far as they can be discovered, have been very conveniently put together in a pamphlet, published by the Uto section of the Swiss Alpine Club,* a precedent worthy of adoption in other cases. This has run through several editions, and contains a narrative of the search for the bodies, of their discovery, and of the inquest, as well as biographies and portraits of the victims; also a map and an illustration showing the exact spot at which the fall occurred. The following narrative is taken from a copy of the fifth edition, with one or two additions which are expressly pointed out:—

On Wednesday, July 13, six young Swiss—the brothers J. H. and Alexander Wettstein, K. Ziegler, G. Kuhn, G. Bider, and W. Bär—arrived at the Hôtel Staubbach, Lauterbrunnen, and began to make preparations for making some high ascent. They declined the services of any guides; though it is stated that at supper there was a discussion, one of the number protesting, but in vain, against undertaking the proposed expedition without guides. They refused also to give any information as to their destination, though one of them, in answer to a guide, hinted that perhaps they were going in the direction of the Roththal. It was ascertained later that they had forwarded a case of potted meats to the Eggischhorn (received by Herr Cathrein on July 13), and that on the 14th they telegraphed to the same place ordering provisions to be sent to the Concordia hut. They left Lauterbrunnen at 2 p.m. on Thursday, July 14, carrying their own provisions, amongst which were two bottles of wine and half a flask of cognac (both taken from the hôtel, though they may have had more wine and spirits in their

* *Das Unglück an der Jungfrau vom 15. Juli 1887*, dargestellt von F. Becker und A. Fleiner. (Hofer and Burger, Zürich. 48 pp. 8vo. 1 franc 50 centimes.)

knapsacks). They mounted leisurely, took some coffee and milk from the Stufenstein Alp, and spent the night in the S. A. C. club hut in the Roththal. They started the next morning (July 15) leaving a card behind with their names and the statement that they were on their way to the Jungfrau. They were observed from Trachsellauenen making the ascent by what is called the new route, *viâ* the south-west rock ridge;* but they must have started very late, as between 6 and 7 A.M. they were seen quite low down on the ridge; though the reason for this late start can only be conjectured. They followed the usual route with remarkable skill and accuracy, as was proved by their track later, found by the search parties, and about 2 P.M. were seen on the 'Hochfirn,' above all the difficulties of the ascent. By this time the weather had begun to change; a very strong hot wind was blowing from the west, and clouds rapidly gathered round the higher summits. In those clouds they soon disappeared, and were not seen alive after 2 P.M. on July 15.

The storm increased in violence, and raged that afternoon and the next day. Some anxiety began to be felt at Lauterbrunnen, and this became more acute when it was ascertained by means of the telegraph that the party had not reached either the Eggischhorn or the Grimsel. Search parties were sent out on July 17, and the following day from Lauterbrunnen, the Eggischhorn, and Grindelwald. It was at first supposed that the wind had blown them down somewhere on the Roththal side, or that they had fallen into the great bergschlund on the Aletsch glacier side of the Roththal Sattel, which was known to be remarkably wide and deep this summer. But, despite very careful searching, no trace of the bodies could be found, though it was ascertained that the track kept close to the right direction, and went to the summit of the Jungfrau. The weather still continued very stormy, and greatly increased the difficulties of the search parties. It cleared up on July 21 (Thursday)—a week after the six had left Lauterbrunnen—and on that day the third Lauterbrunnen party of guides and Herr F. Oertly-Jenny, with Fritz Graf (father and son) succeeded in reaching the final ridge from the Roththal hut about 8.30 A.M.

Here they separated, Herr Oertly following the track towards the summit, and the main search party descending slightly on the other side to look down on the Aletsch glacier. To his intense astonishment Herr Oertly soon made a remarkable discovery. About 65 feet S.E. of the actual summit, on the edge of the rock wall on the Aletsch glacier side, and at a spot where the wind does not heap up the snow, a

* This route has been already mentioned in our pages, and is fully described in the last two *S. A. C. Jahrbücher*. It was discovered on September 20, 1885, was taken seven times in 1886, and had been followed by two German gentlemen in 1887, about a fortnight before the accident. From a note in the book at the Concordia hut it appears that on October 3, 1886, the ascent was made by an Englishman, Mr. C. A. V. Butler, with Johann and Peter Lauener. The times were: leave Roththal club hut 4.45 A.M., reach summit of the Jungfrau at 10.20, and the hut at 2.45 P.M. The general impression seems to be that, notwithstanding certain blastings and certain iron spikes, the ascent is harder than its discoverers made out, though free from danger.

sort of shelter was found. This consisted of four walls, built of stones, and about two feet high. In this enclosure lay certain articles, which made it certain that the unfortunate party had been there, in fact had most probably raised this shelter from the storm. These were: a spotted blue handkerchief with the initials E.B., in which was a young dead marmot; a box of potted meat, with some of its contents still remaining; a bit of omelette in paper (they had taken one from Lauterbrunnen); and four playing cards. There was no fragment of writing to be discovered.

This discovery was at once communicated to the four Lauterbrunnen guides, who, in their turn, had just learnt from the shouts of two Grindelwald guides below that these latter had found the bodies. The particulars of this important incident are thus related in a letter printed in the 'Times' of July 26:—

We spent the evening of the 20th inst. at the Bergli Club hut with our guides, Peter Baumann (the younger) and Ulric Kaufmann. There was present also a search party of six Grindelwald guides, who had been unable, on account of the stormy weather, to proceed that day towards the Jungfrau.

We left the hut at 1.30 A.M., the morning being fine and the snow firm, and reached the final Bergschrund at 6 A.M. to find the bridge broken and the Schrund apparently impassable. We were soon joined by the search party, some of whom commenced bravely cutting a pass round the western termination of the Schrund. After an hour's work their efforts succeeded, but as a heavy fog had then formed over the summit of the mountain, and as the pass, being cut under an ice cornice, was by no means free from danger, we decided at 7 A.M. to descend. Half-way down the long snow slope Peter Baumann saw an alpenstock fixed in a ledge of snow about 500 yards to our left, under the abrupt eastern precipice, and, on proceeding to a patch of snowfield about 120 feet below, we found the half-buried remains of the unfortunate victims, all lying in an area of about 50 feet square.

Word was passed at once to the search party, and we returned without delay to the club hut, and reached Grindelwald at 5.45 P.M.

HERBERT NANKIVELL.
J. WILSON.

On hearing this news, Herr Oertly and all the Lauterbrunnen guides at once descended the mountain, succeeded in leaping over the bergschrund (the upper lip of which is stated to have been about $16\frac{1}{2}$ feet—5 mètres—above the lower), and proceeded to the spot where the bodies lay, nearly covered with fresh snow. One alpenstock was seen fixed in a snow ledge above, another upright close to one of the bodies. It was remarked that the bodies were all near together, face downwards, hats (despite having been tied on by string) and knapsacks close by. Guides were at once despatched to the Eggischhorn, Grindelwald, and Lauterbrunnen to announce the success of the search. The two Lauterbrunnen men—Fritz Steiner and Hans Graf—achieved the remarkable feat of reaching their village *over* the Jungfrau at 2.20 P.M., barely five hours from the summit.

Arrangements were at once made for conveying the bodies to the Eggischhorn, whither the local authorities were at once summoned. They reached the inn on the evening of July 23, the medical examination and inquest having taken place on the Märjelengrat. The official statement is printed in the pamphlet from which this narrative is

taken. It appears that the skull in each case was fractured on the left side, and in several cases the legs broken; but, save in the case of Herr Bider, there was no injury to the hands or arms, and the right side of the body in each case was quite intact. The sum of 454 odd francs and three watches were found: in two other cases only the watch chains. One watch had stopped at 5.10, another at 5.45, the third at 4.10; but it is probable that they had run down, as two of them started again on being wound up. One body had lost a shoe; in the other cases parts of the heels and soles were gone. They had no provisions with them, and no notebooks or diary of any sort. Most of the party had put on a second flannel shirt over the waistcoat. It is further stated that the features were calm in each case, the eyes half open, and the fingers tightly clasped—from which it may be inferred that death ensued instantaneously and painlessly. The bodies were carried down to Yiesch, and sent thence by road and rail. Herr Bider was buried at Bern; the others near Zürich.

The victims were all young men, distinguished in their respective professions. Herren Bür, twenty-four years old, Kuhn, twenty-four, and Ziegler, thirty-four, were masters in schools at Hottingen, Glarus and Zürich. Herr Bider, twenty-four, was an apothecary at Bern; Herr J. H. Wettstein, twenty-eight, was a scientific man (zoologist), like his brother Alexander, twenty-six. The former was the secretary of the Industrial Instruction Section of the Federal 'Commercial and Agricultural Department' at Bern; the latter (whose abilities are praised in the highest terms by Professor Heim, of Zürich, the well-known writer on glaciers) had devoted himself to the study of geology, was already an authority on the subject of fossil fishes, and was regarded as one of the rising scientific men of his country. All were unmarried, save Herr Ziegler, who married in 1879, and leaves behind him a widow and four children.

We can but conjecture how and why the fatal accident occurred. From the erection of a shelter it is very probable that they spent the night of July 15 there. Next day, the weather not improving, they probably thought it best to attempt the descent towards the Aletsch glacier. Herr Oertly, who himself saw and followed their track, states that a little way below the summit the traces in the snow diverged more and more to the left towards the rock wall on the E. side falling to the Aletsch glacier. Possibly they lost their way slightly in the clouds, mistaking a lateral snow ridge for the main ridge, or they may have left the ordinary route intentionally in order to turn the great bergschrund, or to avoid the fierce W. wind. However that may be, they began to descend a snow gully in the rock wall, where their traces could still be seen by Herr Oertly. The leader most probably slipped or fell and dragged the rest down with him, the fall being nearly sheer to the glacier, and one body having been found buried much more deeply than the others. The height they fell is estimated at about 200 mètres (= 656 ft.), and everything leads us to suppose that death was immediate. The exact spot of the accident may be best described as on the edge of the E. rock wall, which is a little to the right of any one ascending from the Aletsch glacier to

the Roththal Sattel, and having reached a point about half-way up the snowy hollow or wall between the true and the false Jungfrau.

It is known that Herr Ziegler intended to search for traces of lightning, and Herr A. Wettstein's whole journey had for its object the collection of geological specimens for some foreign collections. The scientific objects of these members of the party are the probable reason of their leisurely progress. It is certain that there were only two ice-axes among the six. These probably belonged to Herr Kuhn and Herr A. Wettstein, as the most experienced of the party, their four friends being armed with alpenstocks only. It is also now a well ascertained fact that all the members of the party (with the possible exception of Herr Bär) had had more or less experience in climbing, and some were more or less distinguished gymnasts. Herr Ziegler had won a high place in the Federal Gymnastic Competition of 1876, and Herr A. Wettstein had already accomplished several ascents. Even more important is the case of Herr Kuhn. He intended to offer himself for the examination required to qualify a man to be a professional guide, and it is stated that had he done so before leaving home he would certainly, on the ground of his experience and knowledge, have received the usual certificate of capacity. These facts, added to the successful way in which they found their way over all the real difficulties of the route, show pretty conclusively that their sad fate was not exclusively due to their want of experience or to their going without guides; since Herr Kuhn was all but technically a guide, and had frequently headed expeditions before. Conjectures only are possible as to the real cause of the accident. It would seem on the whole that the continuous bad weather was the primary cause. Possibly want of minute local knowledge and lack of provisions contributed to the fatal result. Another secondary cause was, without much doubt, the insufficient strength and bad quality of the rope used. Mr. Dent (the President of the Alpine Club) informs us that it was broken into no less than *sixteen* pieces. He obtained from Herr Cathrein a fragment of the rope, which is now lying before us. It is barely half as thick as a man's little finger, is composed of four strands only, and is in fact rather a rope for binding wood together than one suited for use on a glacier. A stronger and more suitable rope might have enabled the hindermost men to hold up the foremost when they made the fatal slip. It is impossible in our almost ignorance of the circumstances to say that it would certainly have done so. But we are distinctly of opinion, on a review of the whole case, that the choice of such a poor rope was, far more than any actual want of experience in climbing or the lack of guides, the main cause of this unfortunate occurrence next after the unfavourable state of the weather.

On July 19 the Rev. David Wheeler lost his life under the circumstances described in the following letter from his companion, Mr. James Sully, which appeared in the 'Times' of July 25 :—

SIR,—A sad accident occurred here yesterday afternoon of which I was the sole witness. The Rev. D. Wheeler, the English chaplain at Samaden, and myself walked in the morning from the Bernina Houses to the top of the Diavolezza pass, intending to return the same way. Seeing a track leading

on to the Pers glacier at the foot of the pass, Mr. Wheeler proposed to take it. I tried to dissuade him from venturing on to a glacier without a guide, but he said he would have a look at it. He walked on to the glacier, I keeping cautiously behind. After he had gone about a couple of hundred yards I shouted to him, asking whether he still saw the track. He answered, 'All right,' and about a minute afterwards he sank into a crevasse, calling out 'Halloo!' I went as near the edge as I dared, and shouted to him. He rejoined quite distinctly, 'All right; go for a rope.' I asked him whether I could be of any help, and again he said quietly and distinctly, 'Go for a rope.' At the same time I heard him hacking at the ice with his axe. Knowing him to be a far more experienced mountaineer than myself, I left him, reaching the Bernina Houses in about two hours. There I fortunately found a friend just driving off to Samaden, and he took me to Pontresina, where we engaged three guides for the rescue. I tried to accompany them, but was not equal to another ascent of the pass. By dint of a noble perseverance, they succeeded after an hour or two, by help of my description and in the face of the darkness and a heavy thunderstorm, in discovering the unfortunate gentleman drowned in the water at the bottom of the crevasse. Mr. Wheeler's gentle and kindly ways had won him much popularity at Samaden, and his sudden and shocking death has cast a gloom over the place.

Mr. Wheeler, while waiting for help, probably slipped from the ledge on to which he had fallen into the water at the bottom of the crevasse. Both parties seem to have been totally inexperienced, or they would have known how rash it is even for experienced men to venture on a crevassed glacier without a rope. We are forced also to believe that Mr. Sully completely lost his presence of mind, which is the more astonishing if he is identical with the well-known writer on philosophical subjects. Mr. Wheeler, who was ordained in 1880, was the association secretary of the Church Pastoral Aid Society in the north-east district.

The third accident above the snow-line last summer took place on August 2 on the Pic des Aupillous or Opillous (11,503 feet), in Dauphiné, and resulted in the loss of one life, that of M. Joseph R. Géný, of Nancy, an assistant inspector of forests in the Grenoble district. We take the following particulars from a letter written on August 7 by his guide, Philomen Vincent, of Navettes, near La Chapelle en Valgaudemar, to M. Felix Perrin, a member of the Alpine Club, who has kindly communicated it to us. They started alone at 3 A.M. on August 2 to cross the easy glacier pass of the Col du Sellar to Val-louise, from Le Clot en Valgaudemar (the highest hamlet in the valley), and at 7.30 A.M. reached the top of the pass. M. Géný, finding that the view was not so extensive as he expected, expressed his wish to go up the Aupillous, which is just north of the col, and about 1,440 feet higher. He asked the tariff for the peak and agreed to pay it. Vincent hesitated to start for some time, remarking that the weather might turn bad in the evening, but was at last overborne, and they began the ascent. On the way up they put on the rope which they had obtained from Armand, the guide-innkeeper at Le Clot. All went well till about 50 or 100 mètres (= 164 to 328 feet) below the summit of the Aupillous. Then M. Géný placed his hand on a mass of rock which gave way, fell between the two, and cut the rope, the unfortunate gentleman disappearing amid the stones set loose. Vincent was half paralysed with horror, but finally made his way down the rocks,

finding M. Gény's ice-axe, field-glass, and hat on the way. He was unable, however, to see the body, but there was a crevasse in the glacier into which he thought it might have fallen.

He therefore returned at once to Le Clot and sent up a search party, by which the body was discovered early next morning. It was brought down to the valley and conveyed to Nancy for burial.

The peak is not a difficult one though little known, but the rocks are very rotten. M. Gény must have fallen a considerable height on to one of the glaciers west of the peak and pass. Ph. Vincent is the best guide of his valley, and has been up the Pic d'Olan several times. He has not yet recovered from the shock of this horrible misfortune, the sole cause of which seems the accidental fall of a great rock on the rope. M. Gény had made several ascents in the district before he tried the Aupillous, and seems to have been of a very impetuous disposition. He leaves a widow behind him.

The loss of eight lives in what may be called the pursuit of pleasure is much to be regretted, and yet this loss may prevent future losses if the accidents of the past summer draw further attention to some great fundamental principle of mountaineering, the violation of which has caused such a loss, and the observance of which may prevent it in the future. In our opinion, the principle brought most prominently forward by the accidents of 1887 is the necessity of having a rope, and a rope of good quality. Had Mr. Wheeler had a rope his life would certainly not have been jeopardized at all; had the Swiss party and (according to one report) M. Gény a rope of proper strength and quality, they might have been alive at this moment; at any rate they would have had a greater chance of escape. Much has been already written about the rope, and yet its use is too often neglected. It is better to put it on too early than too late, for even in the case of an experienced party an apparently smooth glacier offers considerable dangers, while an inexperienced party, needing the rope all the more, will yet delay putting it on if they have seen experienced men do the same. Thus in the use of the rope, as in other matters, veteran climbers have a duty to perform not merely towards themselves, but towards their followers and imitators. Mr. Wheeler's death was, however, rather due to the rashness of ignorance than to any conscious neglect of well-understood precautions.

That the rope should be of good quality, and of as great strength as is compatible with its not being too heavy to carry, seems such a truism that its statement can only be excused by reference to the Swiss and possibly the French accidents this year. We are perfectly aware that it is impossible to carry ropes of more than a certain weight and strength; but on the other hand it is surely folly to knowingly take a rope lighter or weaker than it is possible to carry, for this is simply making a mockery of the whole matter. Too light a rope is infinitely more dangerous than no rope, for in the one case there is a pretence of security which may fatally mislead; in the other danger is incurred with open eyes. It is quite true that even the Club rope will give

way under a very great shock or strain—the writer of these lines once saw such a rope severed, save for one strand, by the sudden fall of a rock on it—but the advantage of using a rope is not only moral, it is also physical; and if we cannot have an ideal rope which will never break, we can at least be careful to employ a rope which has stood certain definite tests, and to cast it at once aside when it becomes frayed or weak.

This year's Alpine accidents, then, enforce lessons as to the use of the rope and of a proper rope. We do not think that they throw much light on the question of mountaineering without guides. Mr. Wheeler had no guide, and perished; but M. Gény perished though he had a guide. In the case of the Swiss party it is only technically true that they had no guide, though we do not care to deny that if they had had a first-class guide he might possibly have saved them from their terrible fate either by refusing to take them up in such weather or by extricating them by force of sheer resolution and daring. But this is only a possibility, whereas the neglect of the rope and of a proper rope is this year but too sad a reality.

Among the accidents below the snow-line the following seem to be the principal. On August 3 Mr. J. M. Bradley, a youth of 17, while returning from a short expedition on the side of the Arpille, near the Tête Noire, and within sight of home, suddenly disappeared and was killed. On July 31 a young Swiss, Herr Hans Körber (son of a bookseller in Bern), slipped during the descent of the Morgenberghorn (7,485 feet), near Leissigen, on the lake of Thun, fell down a rock wall, and was killed before the eyes of his companion, a young employé of his father's. Herr A. Sulzer-Ernst, of Zürich, having crossed the Sanetsch pass (a mule track) on August 13, slipped about 2.15 p.m. while taking a short cut near the Pont Neuf (1½ hr. above Sion), rolled over, fell about 250 feet into the rock gorge of the Morge, and was killed, his companion, Professor W. Ritter, being unable to render any aid. Herr Sulzer was a man of forty-eight years of age, and, as he had fair experience in climbing, it is supposed that he was looking at the view when he slipped, for the footpath is quite easy and used daily. A man named Schuler, engaged in carrying a load up to the Trogen Alp, above Unterschächen (Uri), having stopped to look at a rock above, stepped backwards, and was killed by a fall over a rock precipice. A young girl, Séraphine Tercier (about eighteen years of age), while descending the W. side of the Moléson (6,585 feet) on July 18, wishing to shorten the way, slipped and fractured her skull against a sharp rock. Another young girl, Cecilia Furrer, of Andermatt, was killed by a fall down a rock precipice. A traveller from Nesslerau was killed by a fall near the Club hut (7,136 feet) on the Säntis. A young Vaudois, by name Desplands, slipped on the rocks of the Dent de Corjon (6,460 feet), near Rossinières, and perished. A Neapolitan traveller, named Achaes, was killed while making an ascent of the Diablerets without guides. On August 13, Elise Hepp, a servant girl, A. Ranalder, an embroiderer, both of Chur,

and Pancraz Boner, a carpenter, of Maienfeld, were killed by falling over a precipice on the Falkniss (8,544 feet), near Ragatz, in consequence of slipping on a very steep grass slope. They had gone up for the purpose of picking edelweiss. The girl was holding the rope by the hand, and let go when she slipped. The two men slipped in trying to stop her. On September 27 two young men of Le Châtel, near Bex, were killed by a fall over a rock wall on the way to the Alp les Loex.

Several casualties are reported from the Eastern Alps. Herr Hans Dollmayer having made, on June 26, the ascent of the Tamischbachthurm, in the Ennsthal (6,674 feet), was killed on the way down by falling over a rock wall, through having missed the right way down to Gsatterboden. Herr R. List, looking for edelweiss near the Glocknerhaus, stumbled and fell to the ground with such force that he received injuries which proved fatal to him a few days after he had been carried down to Heiligenblut. Herr A. Schreyer (a young man of twenty) died of exhaustion on August 23, close to the projected shelter hut on the Schrambachscharte. He had been up the Hochkönig (9,640 feet) with a friend, when a snowstorm came on from the direction of the Steinernes Meer, in which they wandered about two days. Herr Schreyer being unable to go any farther, his friend went for help, but returned to find the unfortunate man frozen to death. On August 6, Herr A. Heber, a young man, twenty-one years old, broke his back and died in trying to climb a rock wall above the waterfall near Seehof on the Achensee. Herr Mandl, of Laibach, despite repeated warnings, undertook a climb in the defile 'Zum Todten Weib,' between Mariazell and the Semmering pass. This resulted in his death by a fall down a rock precipice. On July 22 Professor Ernest Prix, while descending from the Parseyerspitze (9,955 feet) above Landeck, lost his footing, perhaps through vertigo, and was killed. He was the last of his party, consisting of three other travellers and two guides, but it appears that they were not roped together. On July 10 Herr Georg Weiss, of Lindau, was killed on the Drei Schwestern (6,880 feet) near Feldkirch. We have been unable to procure any particulars of two other accidents (mentioned in the daily papers), each of which involved the loss of one life. They occurred on the Ganterist (7,143 feet) and on the Kaisereck (7,172 feet), both summits in the ranges to the W. of the Simmenthal, between Wimmis and Zweisimmen.

Among the narrow escapes none was more remarkable than that of Herren G. Lammer and A. Lorria on the Matterhorn. On August 3 these two gentlemen, without guides, left the Stockje hut at 1.45 A.M. to attempt the ascent of the Matterhorn by Mr. Penhall's route of 1879. They reached a point not very far from the top, but were compelled, at 1 P.M., to turn back owing to iced rocks. At 5.30 or 6 P.M., while traversing Penhall's couloir, they were carried down by an avalanche. Herr Lorria received concussion of the brain, besides a fracture of the right leg above the ankle, had both feet frostbitten, and became unconscious. Herr Lammer, with a badly sprained ankle, pulled his friend on to a rock, stripped off his own coat to cover him, and then went for aid. He found no one at the Stockje hut, so had to crawl down to the Staffel Alp, where he de-

spatched a message to Zermatt. A relief party came up and reached Herr Lorria about 7.20 A.M. on the morning of August 4. He was still unconscious, and in his delirium had stripped off his clothes. He was conveyed with great care to Zermatt, and is now, we believe, in a fair way to recovery. Herr Lorria's escape from death is not less noteworthy than the very plucky and loyal conduct of Herr Lammer, who cared for and rescued his friend though himself severely injured.

We cannot refrain, at the close of this long list of casualties (a list such as, we regret to say, is becoming a constant item in the November number of the Journal), from expressing a hope that climbers will prefer to incur the reproach rather of being too cautious than too rash or too careless. A moment's inattention may bring about the most lamentable results, and do great harm, in the public mind, to our noble craft. We cannot help feeling uneasy when we consider that very many of the accidents we have had to record of late years have happened to climbers of considerable or even very great experience; a sign that they presumed on their knowledge and paid the penalty of their rashness. We appeal earnestly, in the first instance, to experienced climbers not to bring mountaineering into disrepute by their acts, whether in themselves or as an example to others, for knowledge which is possessed and cast on one side is far more fatal than the densest ignorance of a greenhorn 'tourist.'

NEW EXPEDITIONS IN 1887.

[The expeditions recorded in the following pages are believed to have been made for the first time by English or foreign mountaineers. In cases where foreign climbers have preceded English travellers, references to the original accounts have, as far as possible, been given.]

Dauphiné District.

COL DES ROUGES, *June 25.*—The Rev. W. A. B. Coolidge and Mr. Frederick Gardiner with Christian Almer (the younger) and Simon Barnéoud, of Vallouise, crossed this pass, which had hitherto been unvisited by travellers.

Starting from Vallouise, they followed the ordinary path to the springs at Ailefroide, and thence for twenty minutes up the Combe de Celce Nière by the Col du Sélé track. Then, crossing to the right bank of the torrent by avalanche snow, they ascended the conspicuous zigzag path up the S. side of the valley, by which (in 1.25) they reached a shepherd's hut at the entrance of the valley between the Crête de Claphouse and the point 3,053 mètres. Mounting this valley (then filled with snow) to its head, they reached (2.20) the col just N.W. of the point 3,053.

Descending into a snow-filled gorge, they descended the steep, rocky slopes down Entraigues, keeping throughout on the edge of the precipice overhanging the right bank of the stream flowing direct towards Entraigues. The huts of Entraigues were reached in 1.40 from the col, and Ville Vallouise regained in 1.50 by the usual path.

From the shepherd's hut there is the very best view of the south face of the Pelvoux which can be obtained.

TÊTE DE VAUTISSE (3,162 mètres = 10,375 feet), *June 28.*—The same party starting from the hamlet of Freissinières (which they had reached from Vallouise by the easy grass Cols de la Pousterle and des Lauzes) crossed in five minutes to the right bank of the Biaissee torrent, and mounted an excellent path (marked on the map), which traversed the Bois de Monsieur, and brought them (2.20) to the chalet by the small lake marked 2,073 mètres. The path then descended, and remounted through the Grand Bois to the entrance of the Combe du Sellar (25 mins.). The party walked up this valley (there being still very much snow) till quite near the N.E. foot of the Rocheclaire (3,111 mètres), when they bore due south, and by a steep snow slope gained the col between the Rocheclaire and the Vautisse (3½ hrs.). Leaving Barnéoud with the bags on the col, the others followed the very long, though easy, snow and rock ridge to the E., by which (1¼ hr.) they attained the island of rock which forms the summit of the Vautisse. No traces of any previous ascent were found, though the Vautisse is the highest summit in the ranges south of the Biaissee or Dormillouse valley, exceeding by 42 mètres the Grand Pinier climbed by the same party in July 1880.* Returning to the col in 1 hr., the whole party (leaving to the left the easy direct descent into the Combe de Couleau) made a long and fatiguing traverse (it might be shorter to descend to the valley and mount again) to the Col de Couleau, S. of the Rocheclaire (1¼ hrs.), and remounting to the Col des Terres Blanches (55 mins.) gained, by way of the Saut du Laire and Prapic, the hamlet of Orcières, in the upper Drac valley (3½ hrs.).

The whole route lies through a very little known mountain tract, and was found very wearisome owing to the enormous amount of snow and the excessive heat of the day.

COL DE LA MÉANDE; PIC DE MANCROS (3,211 mètres = 10,535 feet); E. PEAK OF THE JUMEAUX DE CHAILLOL, *July 1.*—The same party starting from the hamlet of Les Borels en Champoléon followed the usual track of the Col de Val Estrète to the hollow at the foot of the final ascent to the col (2.10). Then bearing due W. they mounted by the grass slopes on the left bank of the torrent, and by the snow slopes of a small glacier to the ridge of the Montagne de l'Ours, near the N. foot of the peak 3,211 (1.55), just where Bourcet's map marks the Col de la Méande. Ascending along this ridge, Barnéoud and the bags were left in twenty minutes, the rest of the party mounting along the long snow ridge to the Pic de Mancros (3,211), the point of junction of the Chaillol and Ours ridges (40 mins.). Descending in five minutes to the col W. of 3,211, they remounted in ten minutes to the easternmost point of the double-headed peak between that col and the Col de Navettes, to which the name of Jumeaux de Chaillol may be fitly given. Returning in a few minutes to the col (which was crossed in 1879 by Mr. Gardiner's party returning from Chaillol Côte (3,120),†

* *Alpine Journal*, vol. x. pp. 88-9.

† *Ibid.* vol. ix. p. 358.

and may be named Col de Mancros), they descended in ten minutes to the upper basin of the Navettes glacier. Almer went off to bring Barnéoud and the bags down the easy rocks of the Col de la Méande. The whole party then glissaded down the glacier, rejoined the Col de Navettes route, and went down to La Chapelle en Valgaudemur (2.35 from Col de Mancros).

Except possibly the N. ridge of the Mancros, and the E. peak of the Jumeaux, every step of the route had been previously made. The object of the day's journey was the exploration of the eastern part of the Chaillol ridge. It was ascertained that the ridge rises gradually from the Mancros to Vieux Chaillol, each point to the W. being higher than that to the E. The figure 3,211 is quite wrong; the peak is much lower than any of those to the west, the Jumeaux, Chaillol Cône, and Vieux Chaillol. On his ascent of the peak 3,211, in August 1887 (up by N. ridge, down by S. face), Monsieur Paul Moisson ascertained that the real height is 3,094 mètres = 10,151 feet).

PIC DES PRÈS LES FONDS (3,363 mètres = 11,034 feet), July 8.—The same party made the first ascent of this peak. Starting from Monestier on the Lautaret road, they followed the path to the Grangettes chalets at the entrance of the Vallon de Tabuc (45 mins.), and then another up the slopes behind them to a solitary hut on the upper pastures (1.10). The N.E. end of the Glacier des Près les Fonds was easily reached by grass slopes and the moraine in 1.25, and was traversed to the foot of the peak. The party then climbed up snow slopes and easy rotten rocks on the right bank of the couloir leading up to M. Rabot's Col des Près les Fonds (crossed on August 11, 1878*), and so gained the N. ridge of the peak some way above the col (2¼ hrs.). They followed this ridge to the summit, there being one rather sharp bit (55 mins., or 6½ hrs. from Monestier). The view was very fine, including the Matterhorn and Mont Blanc, besides Monestier itself.

Descending by the W. ridge towards the snow col between the peak and the point 3,602 (crossed in 1886 by Mons. F. Chancel), the party descended on the right bank of the main couloir by snow and rocks to the northernmost branch of the Glacier du Monestier (55 mins.), by the left bank of which the icefall was turned, and the main glacier gained, where the routes from the Cols Jean Gauthier and Tuckett fall in (20 mins.). The ruined Refuge Chancel was reached by the glacier in twenty minutes more (or 1.35 from the peak), whence a pleasant stroll of 1.20 down the Tabuc valley and past the Grangettes chalets led back to Monestier.

The route taken on the descent is by far the best and shortest way of reaching the peak. The times given above must be reckoned as slow on the ascent, owing to the overpowering heat of the day, and very quick on the descent. The peak is the highest summit visible from Monestier, and seems to have been oddly neglected.

MONT SAVOYAT (3,340 mètres = 10,958 feet); SOUTH PEAK OF GRANDES ROUSSES (3,473 mètres = 11,395 feet) BY S.E. RIDGE; NORTH PEAK OF GRANDES ROUSSES (3,473 mètres = 11,395 feet) BY S. RIDGE,

* *Annuaire de la Société des Touristes du Dauphiné*, 1878, pp. 82-5.

September 12.—The Rev. W. A. B. Coolidge with young Christian Almer, starting from a chalet near the right bank of the Torrent des Malatres (2 hours above Clavans) mounted by slopes of grass and stones to the foot of the point marked 2,958 mètres on the French map (1 hr.), then bore to the right over a moraine to the right edge of the nameless glacier E. of the peak (really a branch of the Glacier des Quirilies) ($\frac{1}{2}$ hr.) skirting which they gained ($\frac{1}{2}$ hr.) the rocky ridge between that glacier and the Glacier du Grand Sablat at a point slightly to the N. of the peak 2,958. They then followed that easy ridge towards the N.W., turned two aiguilles on the E. side, reached the base of the final peak (55 mins.) and the highest summit by a slope of stones ($\frac{1}{2}$ hr.). No traces were found there, and this is believed to be the first ascent. Descending by the easy rocky N.W. ridge to a high col between the nameless glacier and the Glacier du Grand Sablat they remounted by snow slopes to the great cross on the southern peak of the Grandes Rousses (30 mins.), which was thus reached by the S.E. ridge—a new route. Descending along the N. ridge of the peak to the lowest point between it and the northern peak (a point known as the Brèche des Grandes Rousses) (40 mins.) they then climbed up to the N. peak by the S. arête. The first part of this ridge was very difficult, three main and many minor aiguilles of rock having to be turned or crossed. The party occupied two hours in gaining a conspicuous snow field on the E. side of the third great aiguille: from this point the difficulties gradually decreased, and the last bit was up an easy snow ridge (1 hr. from the snow field). The ridge between the S. and N. peaks was thus completely traversed for the first time (3.40 from one to the other), the ascent of the N. peak from the Brèche never having been previously accomplished. From the N. peak the party descended by the snowy N.E. face to the great Glacier de S. Sorlin, which was quitted on the right bank (just S. of the point 2,788 mètres) (55 mins.), whence the highest huts of the Aigues Rousses were reached in fifty-five minutes more.

CINE DU GRAND SAUVAGE (3,229 mètres = 10,594 feet), *September 13.*—The same party made the first ascent of this peak. Starting from the Aigues Rousses huts they retraced their previous day's route to the Glacier de S. Sorlin (1.25), and mounted the E. side of the glacier to the Col de la Combe de la Valette, near the N.E. foot of the peak (40 mins.). Ascending by easy broken rocks and snow slopes they gained the Col du Grand Sauvage just E. of the peak (30 mins.), whence the first summit was attained in 13 mins. by easy rocks, and the highest—a little farther to the W.—by a traverse of three or four minutes more. The view of the Rousses chain from this point is most striking and interesting. They descended by the broken rocks of the N.W. ridge to the Glacier de S. Sorlin (30 mins.), which was quitted in 25 mins., and Aigues Rousses regained in 40 mins. more. The same afternoon they crossed the grassy Col d'Ornon to S. Jean d'Arves (2.40).

PIC DU CLAPIER DU PEYRON (3,172 mètres = 10,417 feet), *July 17.*—Monsieur Henri Ferrand with Marigot and Blanc Lapierre Virgile, of Valsenestre, made the second ascent of this peak, traversing it by two new routes. Starting from La Chapelle en Val Joffrey

they followed the mule-path to the hamlet of Valsenestre (2 hrs.), and thence followed the path to the Brèche de Valsenestre for $1\frac{1}{2}$ hrs. as far as the bergerie du Vallon. Bearing to the right over rock terraces and very steep grass slopes they reached ($3\frac{1}{4}$ hrs.) the ridge between the Brèche and the desired peak. Mounting this ridge to the E. they gained (1.10) a first summit crowned by a cairn with a bit of wood in it (c. 3,025 mètres), whence by one or other side of a very shattered rock ridge they reached the highest summit ($1\frac{3}{4}$ hrs.), the route during the last $\frac{1}{4}$ of an hour being along the same as that taken by Mr. Coolidge on occasion of the first ascent, August 11, 1886.* The unfavourable state of the weather nearly completely spoiled the view. The descent was effected by the E. arête of the peak which falls direct to the Col de la Muzelle. The upper part of this ridge was turned by the N. face (1.50), but the last bit just above the col was found to be very steep and difficult, the col being gained in 2.40 from the peak, whence Venosc was gained by the usual path the same evening.

PIC BOURCET (3,697 mètres = 12,130 feet), c. July 15.—Mr. F. E. L. Swan with P. Gaspard, J. B. Rodier, and Christophe Clot starting from the Refuge de l'Alpe made the first ascent of this peak, the southern summit of the Grande Ruine. The ascent was made mainly by the great couloir on the rocky S.E. face of the peak. Times: from snow at foot to rocks, $1\frac{1}{2}$ hr.; thence to summit, 1.40.

NORTH PEAK OF THE GRANDE RUINE (3,702 mètres = 12,146 feet), July 29.—Monsieur J. Maître made the first ascent of this point, in twenty minutes from the Brèche Giraud-Lézin by way of the E. face of the S. ridge.

PIC DE NEIGE CORDIER FROM THE EAST (3,615 mètres = 11,861 feet), July 24.—Monsieur G. Engelbach with Christophe Roderon mounted from the *Brèche Cordier* (as the pass is called which is at the E. foot of the peak) by a couloir full of débris, and then by the snow-slopes on the N. face of the peak, skirting the base of the rocky E. ridge. About 100 mètres from the summit of the peak this ridge must be crossed so as to gain its S. face, by mounting straight up which the E. tooth of the peak was gained in $1\frac{3}{4}$ hrs. from the Brèche Cordier.

NORTH SUMMIT OF PIC DU SAYS (3,372 mètres = 11,064 feet), August 27.—Mr. Michael Carteighe with Gabriel Taugwalder, of Zermatt, made the first ascent of this peak. Starting from La Béarde, the party reached the Col de Chéret by the usual route, and thence ascended the peak marked 3,472 mètres in the French map by way of the N. arête, which is an interesting rock ridge ($1\frac{3}{4}$ hr.). The descent to the col by the same route took $1\frac{1}{4}$ hr. According to M. Duhamel's investigations the figures 3,472 are a misprint for 3,372. The S. summit of the Pic du Says (3,409) was first ascended on July 11, 1879, by Mr. Coolidge, by way of the Glacier du Says.†

* *Alpine Journal*, vol. xiii. p. 117.

† *Ibid.* vol. ix. pp. 355-56.

Graian Alps.

GRANDE CASSE FROM THE NORTH (3,861 mètres = 12,768 feet), August 8.—MM. Pierre and André Puiseux with Joseph Amiez, of Pralognan, ascended this peak from the north. Starting from the Refuge de la Vanoise, they reached the Col de la Grande Casse by the ordinary route at 5.10. Two hours were spent in climbing up bad, loose rocks, which were succeeded by very steep snow slopes. The final ridge was gained at 9.5, and the descent made by the usual route.

COL DE PÉCLET (3,050 mètres = 10,007 feet), August 26.—The Rev. W. A. B. Coolidge with young Christian Almer, starting from the château of Thorens, at the head of the Combe de S. Martin de Belleville (above Moutiers Tarentaise), soon crossed to the right bank of the main torrent, by which over grass and rocks the two glacier lakes (not marked on the French map) at the foot of the Glacier de Péclet were reached in 1 hr. 50 mins. Mounting along the right bank of the glacier for a short distance they then, instead of aiming at the apparently lowest depression straight ahead, struck off to the left over broken rocks, gaining (45 mins. from the lakes) the ridge at a point between the Aiguille de Péclet and the Mont du Borgne. The descent to the Glacier de Gébroulaz was effected by steep but broken rocks, and was so much facilitated by the great quantity of snow that it only took 15 mins. They then crossed the glacier to the Pas du Souffre (40 mins.), descended to the Lac Blanc (35 mins.), and in 30 mins. more struck the path of the Col de Chavière, by which Pralognan was reached in 2 hrs. 35 mins. more. The pass named Col de la Chambre on the French map is sometimes called Col de Péclet,* but is only a grass pass, and lies far to the north-west of the pass described above.

POINTE DE LA GLIÈRE (3,386 mètres = 11,109 feet), August 27.—The same party made the first ascent of this peak. Starting from Pralognan they followed the Col de la Vanoise path for 2 hrs. 10 mins. till just beyond the first lake (now dried up). Striking off to the left, as if to go to the Col de la Grande Casse, they very shortly left the way to that pass and bore to the left up grass slopes, above which a depression led to a dried-up lake, nearly at the foot of the narrow glacier, descending from between the two summits of the Glière (30 mins. from Vanoise path). In 25 mins. they reached the foot of the precipitous rocks which support the left bank of that glacier. These, despite their formidable appearance, afforded excellent hand- and foot-hold, it being found best to keep to the right of a well marked gully in them. In this way the upper part of the glacier was reached in 1 hr. from the base of the rocks. An easy walk over the upper snow fields of the glacier brought the party in $\frac{1}{2}$ hr. to the snowy depression between the two summits, whence by means of the very steep but broken rocks of the east ridge and south face the highest peak was gained in 50 mins (5 hrs. 25 mins. walking from Pralognan). The view, which was very fine, extended from the Matterhorn to the Ecrins.

* *Alpine Journal*, vol. vii. p. 150.

The descent was effected by the same route, the times being—to foot of final rock, $\frac{3}{4}$ hr.; to edge of rock barrier, 10 mins.; to base of rock barrier, $\frac{3}{4}$ hr.; to Vanoise path, 35 mins.; and to Pralognan 1 hr. 20 mins.: in all 3 hrs. 35 mins. As a curiosity, it may be mentioned that during the ascent five chamois took refuge on the summit of the lower peak (3,313 mètres), and watched with great interest and anxiety the progress of their unexpected visitors.

GRAND BEC DE PRALOGNAN (3,420 mètres = 11,221 feet), *August 29.*—The same party ascended the north and highest summit of this mountain, having attained the south summit in 1886.* Starting from Ruffier's unexpectedly good little inn at Le Bois, in the Champagny valley, at 10.5 only, owing to the previous bad state of the weather, they crossed to the left bank of the stream by the bridge opposite the village, and then mounted by a sheep track which led them over grass and shale in a N.E. direction to a depression, visible from the village, and just to the left of a snow-flecked rocky point (2 hrs. 25 mins.). This proved to be at the base of the north ridge of the peak and to command the Glacier de la Becca Motta, which was gained by a short traverse along a rocky ridge in 12 minutes. The ascent was completed by means of the rock and snow slopes of a rocky rib dividing the glacier into two, which led to the first summit, a few minutes to the east of the true highest point (1 hr. 55 mins. from the time the glacier was reached; 4 hrs. 32 mins. from Le Bois). The view was all but wholly concealed by clouds. The descent by the same route took 2 hrs. 10 mins., the glacier being cleared in 40 mins. from the summit.

The first ascent of the peak was made on August 25, 1879, by Mons. E. Rochat with the Amiez of Pralognan, the route above described being taken, save that the starting-point was a village rather higher up the valley than Le Bois.†

In September 1886 (according to an entry in the Pralognan Travellers' Book) Mons. G. E. Mieg with Abel Amiez succeeded in descending from the summit to Pralognan, the Vuzelle pastures being gained in $1\frac{1}{2}$ hr. by way of a ridge (very rotten rocks), descending direct from the summit towards the Pointe de la Vuzelle, and a steep gully.

CIMA DELLA VACCA (3,277 mètres = 10,752 feet, New Italian Survey); AIGUILLE ROUSSE (3,482 mètres = 11,424 feet, French map; 3,481 mètres = 11,421 feet, New Italian map); COL DU BOUQUETIN, *August 31.*—The same party, starting from the hamlet of La Val above Tignes, followed the track to the Col de Galese till a short way beyond the great gorge (2 hrs. 5 mins.), then kept up the valley towards the head waters of the Isère, and mounted by moraine and grass slopes on the right bank of the long ice tongue of the Glacier de la Vache to the upper part of that glacier (1 hr. 15 mins.). They then traversed the easy glacier to the shale ridge of the Col de la Vache (55 mins.) overlooking the fine Lago Cerru. Hence the ascent of the Cima della Vacca was made by the shaly north ridge (35 mins.), no traces of any previous visitors being found on the

* *Alpine Journal*, vol. xiii. p. 118.

† *Annuaire du Club Alpin Français*, 1879, pp. 112–114.

summit. Descending on to the main glacier by the rocks of the south-west face of the peak (15 mins.), the party regained the main ridge south of the peak, and followed it (easy broken rocks) to a snow hump at the point where the ridge of the Aiguille Rousse abuts on the main ridge (30 mins.), a few steps west of which is a depression wholly in France, later used as a col. Hence the Aiguille Rousse was ascended in 40 mins. by the east ridge (two teeth having to be crossed), and the uppermost portion of the Glacier de la Vache. Returning to the depression in 20 mins. the party descended by débris and snow, and then traversed to the right so as to gain the opening between the Aiguille Rousse and the Aiguille de Gontière (15 mins.). Snow and débris led to the grass in 15 mins.; in 40 mins. more the huts of Duis in the main valley were gained, and Bonneval $1\frac{1}{2}$ hrs. later. The whole route lies through a very little known district, and one which is very ill represented on the map.

The *Cima della Vacca* is accurately represented on the new Italian map as forming the culminating point of the jagged ridge separating the basin of the Lago Cerru from the Glacier de Carro. On the old Piedmontese map the Cime d'Oin occupies this position, but this name is given on the new Italian map to a low peak (3,184 mètres) to the south-east of the Vacca, and entirely in Italian territory. Just south of the point where the Aiguille Rousse ridge abuts on the main ridge, the new Italian map makes the Cima del Carro 3,310 mètres; while the French map gives to this junction the name of Cima d'Oin, and the height of 3,514 mètres (certainly wrong, and probably a misprint for 3,314 mètres), creating a Cime de Carro (3,345 mètres) farther to the south, though still north of the col of the same name.

The Col traversed by the above party is either identical with or an unimportant variation of the *Col du Bouquetin* made by Mons. Henri Ferrand on July 27, 1877,* though Mons. Ferrand seems to have been mistaken as to the position of the Col de Galese.

The first and apparently only previous ascent of the *Aiguille Rousse* (the highest point in the Iseran group) was made from the west by Mons. E. Rochat on July 31, 1878.† It commands a perfect view of the Levanna group. A very fine expedition might be made by ascending the easy north ridge from La Val, and descending by the east or west ridges to Bonneval. On the French map the name Aiguille Rousse is given to the point 3,434 mètres, W. of that marked 3,482, the latter being nameless. On the Italian map the name is rightly given to the point 3,481.

POINTES DU CHÂTELARD (3,382 mètres = 11,096 feet; 3,434 mètres = 11,267 feet; 3,503 mètres = 11,493 feet); COL DE VÉPRETTE (3,200 mètres = 10,499 feet), September 1.—The same party, starting from Bonneval, followed the usual path to the Chalets des Roches (50 mins.), and those at the entrance to Le Vallon (55 mins.). Ascending to the N.W., they gained (25 mins.) the entrance to the

* *Bulletin du C. A. F.* 1877, pp. 304, 305; *S. A. C. Jahrbuch*, vol. xiii. pp. 157, 158.

† *Annuaire du C. A. F.* 1878, p. 164.

rocky gorge, scaled the lower rocks by a rough track on the left bank of the stream, and then made a great circuit by grass slopes and débris round the head of the gorge in order to gain the left bank of the Glacier de Méanmartin (1.10). The glacier is perfectly easy, and was crossed from E. to W., a slope of débris finally leading (1.05) to the depression—christened Col de Véfrette—between the Pointe du Châtelard (3,382 mètres) and the point marked 3,260 on the French map. From this point the peak 3,382 was climbed in twenty-five minutes by the snow and rocks of the N. ridge. A similar ridge led down in fifteen minutes to the depression between it and the peak 3,434 (this depression apparently corresponds with the Col de Peillenaroux of the old Piedmontese map), twenty-three minutes more up gently inclined shale slopes being required to reach the peak 3,434, on which is a big cairn, and from which Bessans is well seen. A snow ridge led thence, in twenty-two minutes, to the snowy point 3,503 (overlooking the Glacier de Vallonbrun), the highest point of the Châtelard ridge—in all 1.25 from the col. The return was made by the same route, the times being twenty, thirty, and fifteen minutes respectively.

From the col the party descended by débris to the easy Glacier de Véfrette, which was quitted on its right bank, near a little lake, in fifteen minutes. The grass was reached a few minutes later, and a grassy ridge descended. Then bearing to the left they crossed the glacier stream and a stony plain to the lower pasturages ($\frac{1}{2}$ hr.). In half an hour more the Fontaine Gaillarde was reached, and in 1.50 more the chalets of Entre Deux Eaux by the splendid pasture valley of La Rocheure. The three peaks were ascended from Bonneval by the route described above by Mons. E. Rochat on August 5, 1880,* who, from a point on the ridge a little W. of the peak 3,503, descended direct to the Chalets de la Fesse above Lanslebourg. The big cairn on the peak 3,434 has, however, been built since M. Rochat's visit, probably by a chasseur.

Mont Blanc District.

NORTH PEAK OF THE AIGUILLE DES CHARMOZ, *September 10.*—Mr. T. P. H. Jose with François Simond and the 'boots' of the Montenvers hôtel, P. Burnett, left that inn at 4 A.M., and reached, in three hours, a rocky platform (evidently a former breakfast place) at the foot of the couloir leading up from the Glacier des Nantillons to the southernmost of the five teeth of the N. peak of the Charmoz. Starting thence at 7.30, and bearing slightly to the left up the E. face of the mountain, they reached the summit of the northernmost tooth at 10. From thence they passed over the three intervening teeth to the southernmost point, keeping always either on the ridge or on the E. face, never on the W. face. The passage from the first to the fifth tooth took nearly three hours, halts included. The fourth in the order of their ascent was found to be the highest. This is the one immediately N. of the peak more usually ascended, and on it was found the one-franc

* *Annuaire du C. A. F.* 1880, pp. 104–107.

piece with which Monsieur H. Dunod (who first made the same expedition earlier in the summer) had distinguished it from its inferior brethren at five centimes the peak. The descent to the hôtel was made in 3¾ hrs. by the above-mentioned couloir.

This is a thoroughly interesting scramble which does not necessitate an early start from the Montanvers hôtel.

The N. peak of the Charmoz is that first climbed by Mr. A. F. Mummery on July 15, 1880.*

AIGUILLE DU DRU, August 31.—We hear that M. H. Dunod, with Emile Rey and François Simond as guides, and two porters, having climbed the higher Dru by the usual route, and reaching the summit at 9 A.M., succeeded in descending on to the lower peak, and so returning to the Montanvers. The descent of the nearly vertical rocks (150 feet) to the gap between the two peaks was extremely difficult, and occupied three hours. A great length of rope was used, and it would be quite impossible to get back again without leaving the rope there. The weather was perfect, and two other parties accompanied M. Dunod in the ascent, but did not remain on the top long enough to witness his arrival on the lower peak.

Arolla District.

GRAND CORNIER BY THE S. RIDGE (3,969 mètres = 13,022 feet), August 13.—The Rev. W. A. B. Coolidge, with young Christian Almer and his brother Rudolf, starting from the Ferpèche inn, followed the usual route to the Col du Grand Cornier till near the foot of the last snow slopes on the Bricolla side. Striking up easy broken rocks, they reached in thirty-five minutes the crest of the rocky buttress which separates the two glaciers lying to the W. of the peak, and followed it to its junction with the main S. arête in half an hour. They then climbed along the S. arête to the summit of the peak in 2.20, keeping always on the jagged crest, and encountering very serious difficulties in crossing the last two teeth on the ridge.† The main difficulties were avoided on the descent by a traverse round the W. base of these teeth, the junction of the ridges being reached in two hours from the peak. The party then descended straight to Bricolla (in 2.45) by the great W. buttress, a small glacier to its W., and wearisome stone slopes, and returned to Ferpèche by the usual path. This route, though hitherto unrecorded in these pages, is not wholly new, as it appears from a mention in the Ferpèche Travellers' Book, and a longer narrative in Mr. Larden's MS. 'Guide d'Arolla,' that on August 18, 1879, Messrs. Alfred Barran and Frederick Corbett with Joh. Petrus and Jos. Langen made the ascent from the Col du Grand Cornier by the S. ridge. Their note states that they ascended the peak from the col, keeping on the arête the whole distance from the col to the summit, except at one point where a precipitous rock was turned by descending a few feet on to the W. side.

* *Alpine Journal*, vol. x. pp. 95, 397.

† An engraving of this arête will be found at p. 269 of Mr. Whympers' *Scrambles in the Alps*.

DENTS DE BERTOL (3,556 mètres = 11,667 feet); COL DES DENTS DE BERTOL, August 15.—The same party, starting from the Ferpècle inn, reached (in 3.25) the upper snow fields of the Glacier du Mont Miné, having turned both icefalls by the moraine on the left bank, and then by the glacier and snow slopes gained (in 1.50) the ridge at a point S. of the Col de Bertol, and at the N. foot of the peak marked 3,556 mètres on the large Swiss map. From this point the peak 3,556 mètres was climbed in forty minutes by means of a traverse, above some red rocks, across the W. face, then by a great couloir and the N. ridge. The view was exceedingly fine, the Dent Blanche being seen as the Bietschhorn is from the Petersgrat. The return to the col was made along the N. ridge and then across the N. face, and took fifty minutes. The peak may fitly be called Dents de Bertol, and the col Col des Dents de Bertol.

The descent from the col was made by steep, broken, and very rotten rocks, which led in 35 minutes to the lower and level portion of a small glacier (marked on the map) flowing from between the peaks marked 3,556 and 3,536 mètres. Half an hour more down this glacier and the stony slopes of a gorge (separated by a high rocky ridge from that down which the route from the Col de Bertol leads) took the party to the Arolla glacier, some way above the icefall, the Arolla inn being reached in 1 hr. 35 mins. more.

The pass is believed to be new, and the ascent of the peak the second made, though the first recorded in these pages. In the cairn on the summit the names of Messrs. A. Barran, F. Corbett, and the Rev. J. G. Addenbrook were found. These gentlemen made the first ascent on August 13, 1886, guided by Joseph Quinodoz, of Arolla. From the note written by them in Mr. Larden's MS. 'Guide d'Arolla' it appears that they went up from Arolla by the above-mentioned small glacier to the col between the points 3,556 and 3,536, climbed first the latter, then the former by the great couloir in its west face and the south arête, and from the summit reached, in 2 hrs., by way of the south arête and the rocky east face, the Col de Bertol, by which they regained Arolla.

DENTS DES BOUQUETINS (3,848 mètres = 12,725 feet), August 27.—Messrs. W. Cecil Slingsby, Harry Fox, and Legh Powell, and Captain Powell, with Martin Vuignier and Maurice Gaspoz, made the fourth ascent of this peak, but by a new route. Having come from Arolla by the Col de Bertol, they began the ascent at the usual place, and then, in order to get additional and better rock-climbing, took a new way. Instead of traversing the little side glacier or climbing the arête immediately to the left of it (the route taken by M. Anzevui on occasion of the first ascent on September 6, 1871)* the party turned well round to the left, and reached a broad, steep gully, directly facing the Dent d'Hérens. This was climbed by a series of nearly perpendicular chimneys and steep rock faces. The gully led straight up to the second highest peak, from which the highest was soon gained, after 2½ or 3 hours of most capital rock-climbing on hard and firm granite.

* *Alpine Journal*, vol. vi. p. 28; cf. vol. viii. p. 140.

SOUTH PEAK OF DENTS DES BOUQUETINS (3,690 mètres = 12,107 feet), *August 30*.—Miss Blair Oliphant, Messrs. W. Cecil Slingsby and G. S. Barnes, with Martin Vuignier as porter, made the first ascent of this peak. Starting from Arolla at 4.40 A.M., the party reached by the ordinary way the head of the upper Arolla glacier, turned round the spur marked 3,097 on the map, and at 7.30 halted half an hour for breakfast. Some difficulty was encountered in passing the bergschrund, which was effected at 8.40, and the party then attacked the W. face (firm and steep rocks full of large quartz crystals) of the S. arête of the peak. The crest of the arête was gained just above a very remarkable pinnacle capped by a large flat rock. After going along the ridge with one leg in Switzerland and the other in Italy, the party climbed a fine peak to the base of which both the S. and W. arêtes lead. The rocks in many places proved to be exceedingly difficult. This peak was gained at 1.50 P.M. They saw another a little higher, twenty minutes farther, which lack of time alone prevented them from climbing. Leaving the summit at 2.20 they reached the upper Arolla glacier by the extremely rotten W. arête and regained the Arolla inn at 8.50 P.M.

AIGUILLES ROUGES D'AROLLA, South and Central Points (3,650 mètres = 11,976 feet), *September 3*.—Messrs. W. Cecil Slingsby, H. W. Topham, and Arthur Macnamara, with Jean Maitre as porter, started from Arolla at 6.15 A.M., and going by the beautiful pastures of Praz Gras reached the Glacier des Ignes, on which a halt was made for breakfast (8.15–8.45). The S. peak heads this little glacier with perpendicular precipices, supported by steep and massive buttresses, each capped by a pinnacle, and is seamed by one deep gully, the ascent of which was begun at 8.50. No serious difficulties were encountered in gaining the gap to the S. of the peak at 10.15 (halt till 10.50), whence, after passing over a minor point, the true summit of the S. point of the Aiguilles Rouges was gained at 11.32. This peak has not been ascended before.

Starting again at 12, difficulties at once began. Not a yard could be climbed on the terrible W. face, and the arête itself was very jagged, so that the party were forced to scramble round the buttresses on the E. face by narrow and interesting ledges, the last pinnacle being a very savage one, so that a descent of 150 feet had to be made before a very awkward traverse could be effected. The gap between the two peaks was not gained till 1.35, though the party went as fast as they could. At 2 P.M. the highest and central summit of the Aiguilles Rouges was attained. Quitting it at 2.20, a pleasant descent was made by the N. arête and E. face, by most charming rocks and the Glacier des Aiguilles Rouges at 4.30. Arolla was regained at 6.30. The times all day were fast. No danger from falling stones was met with, as had been expected. M. A. Tschumi ('Echo des Alpes,' 1887, No. 1) gives three views of the Aiguilles Rouges.

MONT BLANC DE SEILON BY THE E ARÊTE (3,871 mètres = 12,701 feet), *September 7*.—Messrs. H. W. Topham and Arthur Macnamara with Jean Maitre as porter, having reached the Col de la Serpentine by the usual route, crossed a snow-slope on the S. side of the E. arête

of the peak, in order to avoid a crevasse, and skirted the rocks at the S. edge of this snow till they gained a plateau at the top of the snow-slope. This was crossed to the right, and the E. arête regained (1 hr. from the col) at a point close to the great corniche on the N. side. Turning two rock pinnacles by the S. face, the foot of the final peak was gained. An interesting climb over and round the numerous rock pinnacles on the arête then led to the summit (2 hrs. from the Col de la Serpentine).

Monte Rosa District.

HOBBERG PASS (3,900 mètres = 12,796 feet), *July 29.*—Mr. George Broke with Adolph and Theodor Andenmatten, having left Saas just before midnight, reached by the usual route the Ried pass at 6.10. Striking across the glacier in a southerly direction they gained at 6.55 the foot of the great snow slope leading up to the pass which lies between the Hohberghorn (4,226 mètres) to the south and the Dürrenhorn (4,035 mètres) to the north. Crossing the bergschrund they at once took to the rocks of the Dürrenhorn, which proved to be rather rotten and not particularly easy. The summit of the pass was reached at 8 and left at 9.30. Skirting round a little way on the rocks of the Dürrenhorn and crossing a snow slope, the party then descended by the rocks on the right bank of the Hohberg glacier, having at one point to make use of a couloir exposed to falling stones. They thus gained the glacier at 10.50, and reached its snout at 12.30. Going leisurely and generally without a path, the party gained Randa at 3.15 P.M. The actual time walking from Saas to Randa was 12 hours. It would probably be easier than the descent above described to descend to Randa by the Festijoch.

The pass seems to be new, for though Herr Studer states that two young men of Randa in 1863 ('Ueber Eis und Schnee,' vol. ii. p. 59) descended the great snow slope to the Ried pass (which is at an angle of 60°); it is more probable that they actually crossed the Galenjoch.

DÜRRENHORN (4,035 mètres = 13,239 feet), *July 30.*—Mr. O. Eckenstein with the guide Mathias Zurbrücken, of Macugnaga, ascended the peak by way of the W. ridge, while Herren G. Lammer, A. Lorria, and Kellerbauer ascended by way of the N.W. face. Mr. Eckenstein and his guide started from the Hohberg Cavern at 2.45 A.M., and went up over grassy slopes and moraine till they reached the icefall at the end of the Hohberg glacier. They then struck straight up the rocks till they reached the W. arête of the Dürrenhorn at 4.50, which they followed till they got nearly to the summit. Here they turned on to the S.W. face to avoid detaching stones on a party that was ascending the N.E. face, and climbed through a chimney to the top, which they reached at 9.40. Leaving the summit at 12.30, they followed the arête to the Hohberg Pass, and then went down the rocks, reaching the Gassenried glacier at 3.15, and the top of the Galenjoch at 5.45.

Both these routes appear to be new. On the summit the cards of Messrs. Mummery and Penhall were found, who in September 1879 made the ascent by the N.W. face and N. arête, thinking that it was the

Nadelhorn,* and in the descent 'made straight for the right bank of the Hohberg glacier.'

STECKNADELHORN (4,235 mètres = 13,896 feet), August 8.—Mr. O. Eckenstein with Zurbrücken made the first ascent of this peak (which rises between the Hohberghorn and Nadelhorn.† Starting from the Hohberg Cavern, they went straight up the Hohberg glacier till they reached the foot of an ice couloir coming down from the lowest point in the ridge connecting the Stecknadelhorn and the Hohberghorn. They ascended this couloir till they reached the ridge, and then followed this to the summit of the Stecknadelhorn. No traces of any former ascent were visible. After building a stone man they followed the arête leading to the summit of the Nadelhorn, turning an awkward *gendarme* to the right. They then descended by the usual arête to the Ulrichsjoch, and, instead of following the usual route, traversed the face of the Ulrichshorn, and went down the rocks facing those of the Ried Pass till they got on the glacier and followed the torrent to Saas Fee. Times (excluding stoppages):—Cavern to foot of couloir, 4 hrs.; to top of couloir, 5 hrs. 10 mins.; to summit of Stecknadelhorn, 6 hrs. 10 mins.; to summit of Nadelhorn, 8 hrs. 10 mins.; to Ulrichsjoch, 9 hrs. 35 mins.; to top of rocks, 10 hrs. 10 mins.; to glacier, 12 hrs. 10 mins.; to Fee, 14 hrs. 55 mins.

On August 15 Mr. J. W. H. Thorp, with C. Zurbriggen and Aloys Imseng, starting from Saas Fee, ascended the Nadelhorn from the Ulrichshorn ridge, and then followed the arête, in 1¼ hr., to the Stecknadelhorn, returning the same way.

LENZJOCH, August 11.—The same party made a new pass from Saas Fee to Randa between the Nadelhorn and the Südlenzspitze, for which Mr. Conway has proposed the name of Lenzjoch. Having camped on some rocks a little above the end of the Fall glacier, about 3 hours above Saas Fee, the party followed for some distance the rocky ridge by the Eggfluh till they reached the point marked 3,810 on the map. From here, crossing the arête of the Südlenzspitze, they traversed the glacier N.E. of this summit, and climbed up the rocks on the right leading to the top of the pass. They then descended the rocks straight to the Hohberg glacier, and went down it to Randa in the usual way by the Hohberg valley. Times (excluding rests):—Fee to bivouac, 3 hrs.; to top of pass, 9 hrs.; to Randa, 15 hrs. 20 mins.

DOM FROM THE S.W. (4,554 mètres = 14,952 feet), September 7.—Mr. O. Eckenstein, Herren Alex. Seiler, jun., and Mallinckrodt, with Alexander Burgener and two other guides, ascended the Dom from the Kien glacier by way of the couloir which seams its S.W. flank. Starting from the usual Täschorhorn sleeping-place, 'Im Kien,' at 2 A.M., in doubtful weather, they went up the Kien glacier the usual way, and reached the foot of a large couloir which runs from immediately under the summit of the Dom down to the glacier in its S.W. face, at 7 A.M. They went straight up this couloir, of which the upper part consists chiefly of loose stones bound together by ice. At 10.30 it commenced to snow. The top of the couloir was gained at 1.30, and the snow

* *Alpine Journal*, vol. ix. p. 367; vol. x. p. 340. † *Ibid.* vol. x. p. 333, 339.

ridge followed to the summit, which was reached at 2.10 P.M. with some difficulty, owing to the wind and snow. They then descended the usual way by the Festi to Randa. This route is not recommended; it is too exposed to falling stones. It would not be practicable in fine weather with the sun shining.

TÄSCHHORN BY THE S.W. ARÊTE (4,498 mètres = 14,758 feet), *July 15.*—Mr. and Mrs. A. F. Mummery with Alexander Burgener and a Zermatt porter, mounting from the Kien glacier, reached by a couloir the S.W. arête of the Täschhorn a little way east of Strahlbett (3,755 mètres), and followed this ridge to the summit.

KLEIN MATTERHORN (3,886 mètres = 12,750 feet), *July 29.*—The Rev. F. T. Wethered and Mr. H. F. Wethered with J. M. Biener and J. J. Truffer, ascended the Little Matterhorn by a new route. Quitting the usual track up the Breithorn, at a spot about three-quarters of an hour distant from the St. Théodule hut, they ascended N.E. up the snow slopes, leading on to the N.W. arête of the Little Matterhorn, which overlooks the Little Matterhorn glacier towards the N.E., and so by a very steep slope of hard ice gained the rocks, which afford a short scramble to the top. The route is decidedly more interesting than the ordinary one.

MONTE DELLE LOCCIE BY THE N.E. ARÊTE (3,498 mètres = 11,477 feet, New Italian Survey, which calls the peak Cima della Pissa), *July 25.*—Mr. H. W. Topham with Aloys Supersax and a porter, starting from the Pedriolet Alp, took, in fifteen minutes, to a moraine on the left, and reached by snow and rock the foot of the rocks of the N.E. arête of the peak (45 minutes from Pedriolet). These were climbed to the arête itself (1.15), the rocks of which were followed for two hours to a great gap. This was crossed by descending and traversing on the W. side; the arête was regained, and the summit of the peak reached in 1.40 from the gap. The rocks of the arête are easy, and on the right is a snow wall 50 feet high, along which one can go if it is wished to enjoy the superb view of the Monte Rosa group.

SIGNAL KUPPE BY THE S.E. ARÊTE (4,561 mètres = 14,965 feet), *July 28.*—Mr. H. W. Topham with Aloys Supersax and a porter, starting from the Faller Alp (two hours above Alagna) reached by grass slopes and the glacier a rock lying in the centre of the Sesia glacier (1.50). Leaving this to the left they continued up the glacier towards the S.E. arête till they were at some height above the Colle delle Loccie, and by snow and bad rocks climbed up to the crest of the arête (2.25 from the rock). This was followed, several small gaps being passed, the third of which required great care owing to a dangerous corniche on the Macugnaga side. Having thus reached the foot of the final arête of the peak (1.05) they ascended rocks to some splendid granite blocks (15 mins.), and to snow (20 mins.). A great rock *gendarme* had next to be crossed on the Macugnaga side, care being taken to avoid an inviting couloir on the right. It is necessary to cross nearly to the foot of this couloir and then to double back over very steep ice to the arête. In this way the top of the *gendarme* is almost reached. Descending slightly on the Alagna side, they then climbed

straight up the *gendarme*, and continued along the ridge to some snow, traversing which to the right, steepish rocks led to the summit of the peak in eight hours from the foot of the final *arête*. The peak with two sticks on it is not the true summit.

ALLALINHORN BY THE E. ARÊTE (4,034 mètres = 13,236 feet)
July 12.—Messrs. H. W. Topham and G. H. Rendall, with Aloys Supersax, ascended from Saas Fee to the foot of the Eggnerhorn, crossed the glacier to the foot of a small icefall on the right by which some rocks were gained, whence crossing the Allalingrat they reached the Hohlaub glacier whence snow-slopes led up to the S.E. *arête* of the peak (4½ hours). They followed this ridge as far as some rocks, which were turned on the right by means of a ledge. They then ascended steep snow at the corner, bore to the left, and gained the summit (15 mins. from the corner) two hours from the time the ridge is struck.

ROSSBODENHORN BY THE S.W. ARÊTE (3,917 mètres = 12,852 feet),
July 16.—The same party, starting from Saas, followed the usual route up this peak till under the ice-fall of the glacier after having traversed the high moraine. Crossing over to the rocks on the right, they climbed up them (1.20 from the foot of the moraine), bearing first a little to the left, then to the right till above the icefall, when they struck straight up the rocks to the S.W. *arête*. They then followed this ridge, turning (generally by the E. side) or climbing over various rock obstacles, and gained an easy snow slope (four hours from the foot of the rocks) by which the summit of the peak was gained in twenty minutes.

LAQUINHORN FROM THE FLETSCHOCH (4,016 mètres = 13,176 feet),
July 27.—On the morning of July 27 two parties found themselves on the Fletschjoch, close to the foot of the N. *arête* of the Laquinhorn—the Rev. W. A. B. Coolidge with young Christian Almer and his brother Rudolf (who had come up direct from Saas by the usual route) and Mr. George Broke with Adolph and Theodor Andenmatten (who had started from the Trift Alp, and had already ascended from the Fletschjoch both the Rossbodenhorn and the point marked 3,850 mètres). Both parties then went up the Laquinhorn by the N. *arête*, Mr. Coolidge's party being slightly in advance. The ridge consisted of broken rocks, then encumbered by much fresh snow, but offered no great difficulties, becoming rather steep just below the last peak. The times taken from the Fletschjoch to the Laquinhorn were—Mr. Coolidge's party, 1.40; Mr. Broke's, 1.10, the former making the steps in the deep snow. From the summit Mr. Broke went down to Saas by the usual S.W. ridge. Mr. Coolidge descended to the Fletschjoch by the N. *arête* in 1.13, mounted the Rossbodenhorn, and returned to Saas by the usual route from the pass.

The Laquinhorn does not seem to have been previously reached by its N. *arête*, and it is believed that the present is the first occasion on which the Laquinhorn and the Rossbodenhorn have been ascended by the same party on the same day.

MITTELRÜCK (3,324 mètres = 10,906 feet, Swiss map; 3,362 mètres = 11,031 feet, New Italian map), *July 25.*—Messrs. W. M. Conway, G. H. Rendall, and G. Broke, with Xavier Andenmatten as porter,

ascended this point in twenty minutes from the Portjen pass by the easy N. ridge. A small cairn of unknown origin was found on the summit. The view was hidden by mist, but should be very fine, as the peak is visible from Pallanza. The descent was made in forty minutes to the Mittel pass by the S.W. face and S. arête. Either pass can be reached in about two hours from the Almigel Alp. The peak is visible from Lochmatter's hôtel at Saas Fee.

Bernese Oberland.

ENGELHORN (2,626 mètres=8,616 feet), *August 13.*—Mr. H. Seymour King, with Ambrose Supersaxo and A. Anthamatten, of Saas, starting from Rosenlauri, followed the usual path to the glacier as far as the ruined chalet. Turning then up the alp at the back, they ascended the slopes, keeping rather to the left, in the direction of a little col situated between the two last peaks of the Engelhörner, leading to the Ochsenenthal. About 500 feet below this col they turned to the right and made for a well-marked couloir leading to the foot of a spur that comes down from the middle peak of the three which are seen from Rosenlauri. Climbing up on to the arête of this spur, they made their way down the other side and up to a col between the peak aimed at and the middle peak above referred to. From the col they ascended to the final arête, traversing the face of the mountain diagonally towards the right, and striking the ridge about 200 feet from the summit. The time taken from Rosenlauri to top was 4½ hrs.

EIGERHÖRNLI (2,706 mètres=8,878 feet), *September 2.*—Mr. H. Seymour King, with Ambrose Supersaxo and Louis Zurbrücken, made the first ascent of this peak. Following the path to Alpiglen, and shortly before reaching the hôtel at that place, they turned off across the alp and made for a ridge of rock running up towards the Mittellegi arête by the side of a hanging glacier. Mounting this ridge to a considerable height, they then turned to the left and traversed the face of the mountain until they came under the peak. Climbing first a difficult wall of rock, and then going up a very steep and slippery rock couloir, they made their way first to the ridge and then along it to the foot of the final peak, whence an easy couloir led to the summit. The party left Grindelwald a little after four, and reached the summit at two, having lost considerable time in seeking the way. The mountain was subsequently ascended from Alpiglen by the Messers. Wills in a little under six hours.

SILBERHORN BY THE W. ARÊTE (3,705 mètres=12,156 feet), *September 24.*—The same party, starting at 5 A.M. from a bivouac at the extreme W. end of the Strahlplatten or rocks leading up to the W. arête of the Silberhorn, and facing Stechelberg, ascended to a gap at the extreme left of the Rothbrett, from which, with considerable difficulty, they got on to the W. arête, which they then followed to the summit, finding the rocks very loose and difficult, and not reaching the latter until 3.30. The night was spent high up on the rocks of the Aletsch side of the Jungfrau.

Bernina District.

MONTE ROSSO DI SCERSCEN FROM THE ROSEG FUORCLA (3,967 mètres = 13,016 feet), *September 22*.—Dr. Güssfeldt with Emile Rey, and J. B. Aymonod of Val Tournanche, left the Capanna Marinelli (2,840 mètres high, not 3,000 as usually supposed) at 4.10 A.M., to attempt the Rosso di Scerscen by a new route—along the W. arête from the Roseg Fuorcla. They reached the Fuorcla (also known as Güssfeldt Sattel) at 7.20 A.M., reached a first gap in the ridge (3,567 mètres) at 8.30, and a second (3,752 mètres) at 10.28, keeping below the arête on the Italian side. They then went along the crest of the ridge to the Schneehaube (3,877 mètres—first ascended by Dr. Güssfeldt on September 15, 1879,* from the Scerscen glacier), which was reached at 11.4, a halt of twenty minutes being made on the summit. Always proceeding along the arête, they gained the Rosso di Scerscen at 12.33. The descent was made to the Tschierva glacier by the route taken by Dr. Güssfeldt on the first ascent of the peak on September 13, 1877; † but very serious difficulties were encountered in cutting down a very steep ice wall 50 mètres high, Rey in many cases being obliged to hold his axe in one hand only, and acquitting himself most admirably. This bit took no less than 3½ hrs. The early hours of the night were spent in climbing down the arête leading towards Piz Humor. The glacier coming down from the N. side of the Roseg Fuorcla was reached at midnight, W. of the Piz Humor, and the Roseg Restaurant at 6 A.M. on September 23, twenty-six hours after the start from the Capanna Marinelli, of which 2.6 were spent in halts.

Brenta District.

PASSO DEI SACCI, *August 31*.—Messrs. Harold C., Guy, and Alan Clarkson, and R. B. Yardley without a guide, made a new pass in the Tosa district. Wishing to reach Comano from the Rifugio della Tosa without crossing the Forcolotta (the usual way), they passed under the chimney by which the Cima Tosa is ordinarily ascended, and kept over the glacier to a slight snow depression just S. of the S. buttresses of the Cima Tosa (2 hrs. from hut). Crossing this, the party descended by a steep snow couloir for 150 feet, bore to the right to avoid a precipice, and by a chimney got into a rock couloir. This also, after 200 feet, ended in a fall which forced the party to the left. A snow couloir and snow-slope then led them down to the head of the Val d'Ambies (2 hrs. from col), whence they followed the valley to Comano. This route might be utilised to go from Pinzolo to the Rifugio by going over the grassy S. shoulder of the Dos di Sabione to the Val Agola, and then crossing successively the Bocca dei Camozzi, the Bocca d'Ambies, and the new col.

* *S. A. C. Jahrbuch*, 1879-80, pp. 1-19; *Alpine Journal*, vol. ix. p. 439.

† *S. A. C. Jahrbuch*, 1877-78, pp. 285-312; *Alpine Journal*, vol. ix. p. 179.

ALPINE NOTES.

WINTER MEETING AND DINNER.—The Winter Meeting of the Alpine Club will be held in the Club Rooms, on the evening of Tuesday, December 13. The Picture Exhibition and Winter Dinner will take place in Willis's Rooms, on the afternoon and evening of Wednesday, December 14. Loans of pictures, photographs, &c., for the Picture Exhibition will be gladly welcomed, and it is specially requested that all communications relating to such loans may be sent *as early as possible* to the Honorary Secretary of the Club, W. F. Donkin, Esq. (142 Sinclair Road, Hammersmith, W.)

TETNULD AND GESTOLA.—Questions of mountain nomenclature, in a region still but little known, can have but the faintest interest to the vast majority of readers of the 'Alpine Journal.' We need only, therefore, with reference to Mr. Freshfield's 'Skeleton Diary' (p. 364 of the present number) and a foot-note on p. 232 of the current volume of the Journal, state briefly the following three conclusions:—(1) That the peak ascended by Mr. Freshfield should be known as Tetnuld. (2) That the peak we ascended last year should be known as Gestola. (3) That the name 'Totonal,' by which Mr. Freshfield's peak is marked in our map (facing p. 258, *supra*) should be dropped altogether.

CLINTON DENT,
W. F. DONKIN.

ASCENT OF KILIMA-NJARO.—This great volcano, the highest mountain in Africa, has been ascended for the first time by Dr. Hans Meyer, of Leipzig. It was obvious from the beautiful drawings brought home by Mr. Johnston, that the upper part of the mountain presented no serious mountaineering difficulties, and that the failure of the English artist to reach a higher point was due entirely to his want of mountaineering ambition or experience.*

The ascent took Dr. Meyer six days. On the first he reached the upper level of the forest, on the second Johnston's camp, on the third the snow level where Dr. Meyer's native companions turned back. On the fourth day the traveller—it is not stated if he had European companions—traversed broken lava-fields to the foot of the mountain; on the fifth day the crater was climbed; the sixth was spent in photography and collecting. It is to be hoped that this very meagre account of a most interesting expedition will soon be supplemented by fuller details.

Dr. Meyer estimates the height of Kilima-njaro at 6,000 mètres, or 19,686 feet. There appears to be a glacier in the crater of the mountain.

ON THE ITALIAN SIDE OF THE MATTERHORN.—On July 9, 1887, J. B. Aymonod, J. B. Perruquet, and J. B. Maquignaz discovered a new way up the last precipice on the Italian side of the Matterhorn, and on July 31 ropes were placed on this new passage. With Emile Rey and Aymonod I descended that way on September 14,

* *Proceedings of the Royal Geographical Society*, March 1885, pp. 137-160.

having come up from Zermatt. We started not far from the Swiss summit. The ropes do not go straight down, but are fastened in a diagonal direction. It takes from forty to fifty minutes to go down carefully, and the old route is rejoined in half an hour more by a nearly horizontal traverse along the rocks to the right.

PAUL GÜSSFELDT.

THE NEW INN AT LA BÉRARDE.—This little inn, which has been some years in building, definitely opened its doors on July 1 last, and on July 3 Mr. Gardiner and I had the honour of being the first travellers received under its hospitable roof. We were weatherbound there till July 6, and were far more comfortable than in the old auberge chez Rodier, though of course things were still in a state of confusion, and huge packages were continually arriving with various luxurious additions to the simple furniture. In order to see what it was like when everything was organised and ship-shape, I went there again on September 7, and was again, oddly enough, weatherbound till September 9. Matters had greatly improved since my former visit, and the inn can now take rank with the smaller Swiss inns in remote valleys, such as Ried, or Gruben, or Zinal in the old days. The beds are good, the rooms scrupulously clean (all former visitors to Dauphiné will appreciate the full meaning of this), the food excellent and well cooked, and the prices moderate. The manager, young M. Auguste Tairraz, of the Montenvers Hôtel, has had exceptional difficulties to cope with in addition to the usual troubles of a first season; but he has achieved wonders in a marvellously short space of time, and only needs a little more encouragement in the shape of more visitors to carry out still more extensive plans. La Bélarde has never seen a larger number of strangers than this summer, and I hope that now a really comfortable inn exists there, more members of the Club will find their way thither, for I have no hesitation in saying that, so far as my experience goes, there is no finer mountaineering centre in the whole of the Alps. The facts that two English ladies were able to stay at La Bélarde, the one for three and the other for four weeks, while no less than eight ascents of the Meije were made, show the vast change for the better which the opening of the inn has brought about. All honour is due to the indefatigable Société des Touristes du Dauphiné, who have built the inn, and to M. Tairraz, the enterprising and most courteous manager.

W. A. B. COOLIDGE.

ALPINE ACCIDENTS.—The following circular has been sent to the various Alpine Societies in Austria. It is dated August 10, 1887, and proceeds from the Police Department of the Ministry of the Interior:—
‘In consequence of the repeated fatal accidents to tourists making high ascents, the Minister of the Interior has found himself obliged to consider the question whether any administrative measures can be taken with the object of prohibiting inexperienced tourists from undertaking dangerous ascents where there is no good footpath, unless they are accompanied by tried and licensed guides. It might also hereafter become necessary to revise the regulations as to mountain guides in such a manner as to ensure the security of travellers on the higher mountains. In order to clear up these questions it seems desirable

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that the views of the Alpine Societies interested in promoting the welfare of tourists and strangers should be laid before the Ministry of the Interior. I therefore, by order of the Statthalter of Lower Austria, beg to inquire of you what regulations should, in the opinion of your Society, be issued to prevent the recurrence of fatal accidents in the Alps, and request an answer at your earliest convenience.'

To consider this circular a meeting was held of the committees of the Austrian Alpine Club and of the Austrian Tourist Club (the 'Section Austria' of the German and Austrian Alpine Club being unable to take part in the proceedings). A long memorandum was drawn up and sent, explaining the great difficulties of making such regulations, and the manner in which, even if they attained their object—which is very doubtful—they would put a stop to the increasing number of visitors to the Austrian Alps. The committees expressed themselves willing to discuss the question further with the Ministry.

On these proceedings (which we summarise from the account given in No. 226 of the 'Oesterreichische Alpen-Zeitung') we have only one remark to make. Prohibition, absolute or partial, of making high ascents would only increase the evil which it is desired to remedy. Public attention would be more than ever drawn to the subject, and all adventurous young fellows would feel strongly tempted to break such regulations for the pleasure of breaking them. The only real and effectual remedy is that the Alpine Clubs should do all they can to impress people with the fact that climbing is a skilled occupation, and that, as in all similar occupations, want of skill, due to ignorance or carelessness, must have fatal results.

Herr C. W. Pfeiffer has published in the 'Mittheilungen des D. und Ö. Alpenvereins' (October 1, 1887) a set of statistics as to fatal Alpine accidents which seems very valuable. Based on the table given by M. Guisan* many additions have been made (up to the end of August 1887), and several cases have been struck out where the persons killed were not *bonâ fide* travellers, or guides, or porters; or where death ensued from illness, not from anything directly connected with mountaineering. It usefully completes Mr. C. E. Mathews' well-known 'Alpine Obituary.' †

The results are that from 1856 (1859 is a misprint) to 1887 (inclusive) 50 guides (or porters) and 121 travellers, or in all 171 persons, lost their lives while making 116 expeditions in the Alps. According to date the deaths may be thus classified:—1856–1869, 30 (19 travellers and 11 guides); 1870–1879, 52 (32 and 20 respectively); 1880–1887, 89 (70 and 19): the curious fact being that while the number of travellers killed has rapidly increased, that of the guides killed is slightly falling. Adopting Herr E. Zsigmondy's division of dangers into objective (where the traveller's will has no influence—*e.g.* stones, avalanches, cold, bad weather) and subjective (slipping, falling through corniches, or into crevasses), the numbers are 43 and 128; of these 171 deaths, 2 and 11 respectively, occurred where there were no guides in the party, and the ascent was a difficult one.

* *Echo des Alpes*, 1885, p. 240.

† *Alpine Journal*, vol. xi. p. 86.

Herr Pfeiffer's further investigations lead him to the conclusion that of the 128 deaths due to 'subjective' dangers the majority (92) are due to slips (of which 44 in relatively safe places), and that ten lives only have been lost in consequence of not being roped, or being badly roped. He draws attention to the extraordinary inexperience and carelessness of many who nowadays make high ascents which formerly were only attempted by tried men and with every precaution. He adds a few very severe remarks on climbing without guides, which in many recent cases have been simply foolhardy. The editor appends some excellent comments on the folly of the mania for solving what are now called 'Alpine problems,' that is ascents of peaks by every side and ridge, however dangerous and steep; and recommends all meditating such 'extravagant' expeditions to go alone and without guides. It is also pointed out that the mere fact of being a peasant or a hunter does not constitute a man a good guide, and that gentlemen possess many of the qualities required for being a good guide. A rather alarming suggestion is thrown out as to the possible effect of a gentleman applying for and obtaining a licence as a guide! The whole article is well worth reading.

THE SWISS 'JAHRBUCH' ON THE BORCKHARDT ACCIDENT.—It will be remembered that early in the present year Herr Wolf published a pamphlet on the circumstances attending the death of Mr. Borckhardt on the Matterhorn in July 1886. We gave a summary and short criticism of it at the time, and now the new volume of the Swiss 'Jahrbuch' has a long, interesting, and instructive editorial notice of the same pamphlet. The writer looks at the matter from a point of view midway between the excessive praise bestowed on the guides by Herr Wolf and the severe blame attributed to them by Herr Lorria. He is of opinion that Herr Wolf's statement, that the conduct of Aufdenblatten and Kronig was above all praise, is far too sweeping, and is not justified by facts. He sums up the question in the following words of very great importance, as coming from the editors of the official publication of the S. A. C.: 'The guides, as appears from Mr. Davies' testimony, fulfilled their duty admirably so far as they recognised it; but being relatively young and inexperienced they did not recognise what their first and chiefest duty was. They did not deliberately neglect or violate their duty, but they did not fully take in the extent of their duty.' ('Es liegt also in keiner Weise eine bewusste Pflichtverletzung vor, sondern eine mangelhafte Pflichtenkenntniss.') 'They began the descent too late to bring help to Mr. Borckhardt, and yet too soon for them to close the eyes of the dying man.' Herr von Falkner's conduct is also blamed. It is pointed out that his belief that Mr. Borckhardt's two guides called out for two more men and blankets, while they maintain that they frequently shouted out for aid, may perhaps be excused because of his possible ignorance of the language in which they spoke, though he must have known that it is the custom in Zermatt to send up a rescue party on the second day, and therefore ought to have sent one of his men not down to Zermatt, but up to the party in distress.

We understand that, notwithstanding Herr Wolf's indiscriminate

praise, both Aufdenblatten and Kronig have voluntarily given up their position as guides. It is doubtless in consequence of the accident of 1886 that the Valais government have published a remarkable new code of regulations for guides, according to which each traveller must, in the case of any of the great ascents, take two guides (not a guide and a porter), two travellers three guides, and so on; while considerable hindrances are thrown in the way of non-Valais guides exercising their profession in that canton. These and other points in the code are doubtless well meant, and may secure tourists from bodily harm; but to climbers of any experience they will prove very burdensome, and are certain to appear very ridiculous. As heavy money penalties are to be inflicted in case these regulations are violated, it is certain that either the average Valais guides will soon find themselves in the same position as regards employment and reputation as the average Chamonix guides, or that these rules and penalties will become a dead letter. It is stated that the latter alternative has been adopted by several men last summer, and we are not surprised to hear it. These regulations are imitated from those in force at Chamonix, which have produced unexpected and evil results. The Chamonix rules have often been mentioned unfavourably in these pages, and are once more severely criticised (in consequence of his own experiences) by Mons. J. Vallot in the current 'Annuaire du Club Alpin Français,' pp. 81-85. In the 'Echo des Alpes' (1887, No. 3, pp. 240-7) the new Valais rules are ridiculed and a strong protest recorded against their remaining in force.

FINSTERAARHORN BY THE S. ARÊTE FROM THE CONCORDIA HUT.—Ulrich Almer, his brother Hans, and I starting from the Concordia hut on August 4 this year, followed the ordinary route to the Finsteraarhorn as far as a point (about 1 hr. above the Viescher Glacier) where it is usual to cross some rocks on the left to the snow-field beyond. Here we bore to the right and, skirting the foot of the great S.W. buttress, kept nearly due east, and arrived at the bergschrund underneath two snow couloirs, which are very noticeable from the Grünhorn Lücke. Mounting by the red-coloured rocks between them, we reached the S. arête in 1 hr. from the schrund. Thence to the summit was a grand climb of 2 hrs., the last narrow couloir up the actual peak (which, by-the-bye, is only a few yards to the W. of the arête) taking about twenty minutes. It is, of course, essential that the weather should be fine and the rocks free from snow and ice, but it is indeed a grand excursion, and enables one to traverse both arêtes with an excellent and much-frequented hut as a base. Our time from the Concordia hut to the top was 6½ hrs., including halts, but we started early with a brilliant full moon and frosty air, as we were *en route* to Grindelwald by the Agassiz Joch.

GEORGE H. MORSE.

[Messrs. Farrar and Blezinger in 1883 * and Herr Bodenehr in 1884 † started from the Oberaarjoch hut and (like the 1812 party)

* *Alpine Journal*, vol. xi. p. 368; *Zeitschrift des D. u. Ö. Alpenvereins*, 1883, p. 503.

† *S. A. C. Jahrbuch*, vol. xx. p. 459.

reached the S. arête of the peak from the E. side. Mr. Seymour Hoare in 1877* started from the Rothloch and probably also reached the S. arête from the E. Mons. H. Cordier in 1876 † started from the Rothloch and reached the S. arête by the W. side to the S. of the point marked 3,237. Mr. Morse's route seems to have been practically the same as Mons. Cordier's, but is likely to become popular as the distance from the Concordia hut to the S. arête is much less than that from the Oberaarjoch hut. A start from the Concordia hut shortens the 'traverse' of the Finsteraarhorn in point of time, and makes it possible to double the pleasure without making a great *détour*.]

THE KILCHFLUH PASS, OR SAUSGRAT.—A pass in the Bernese Oberland, as to which Mr. Ball ‡ asks for further information—and Tschudi § is very vague—may, even though it be not a snow pass, deserve a few lines in these pages, especially as it affords a variation on the well-known tracks from Lauterbrunnen to the Gemmi district. This is the Kilchfluh pass, or Sausgrat, which I crossed on June 13 of the present year, accompanied by young Christian Almer, who knew as little about it as I did, so that the map was our chief guide. Starting from the little inn at Isenfluh (1 hr. above Zweilütschinen), we followed the cattle track to the S.W. (part of the time in the splendid forest), which brought us at length to the left bank of the roaring Sausbach, just at the entry of the glen of the same name (1.5). Crossing the stream, steep zigzags led up to the upper valley at the Flöschwaldweid (20 mins.). This is for a time nearly level, the Sausmatten huts being a little way on. Instead of taking the path to the Ober Saus Alp indicated on the map (for it apparently led up and over very precipitous rocks), we kept to the well marked stony path on the left bank, by which (having passed a very fine waterfall) we gained the glen to the N. and W. of the Mettlenberg ridge (1.35). Being rather uncertain as to our position, we clambered up to the latter grassy ridge, passed round a hillock crowned by a cairn (no trace of the Ober Saus Alp ever being seen), and followed the ridge to the end of the valley as far as a very conspicuous isolated boulder ($\frac{3}{4}$ hr.). A faint and steep track to the right led us to an upper stony plateau ($\frac{1}{4}$ hr.), whence rocks and many snow-fields (probably non-existent later in the season) brought us ($\frac{3}{4}$ hr.) to the pass immediately to the N. of the Kilchfluh peak (2,834 mètres). The most remarkable features in the view were the Schwarzhorn (near Grindelwald), the Schilthorn (close at hand, quite like a big peak), and the green trench of the Kienthal. Slopes of soft snow, followed by a rock precipice, led down in fifty-five minutes to a big, new, wooden hut (Hohkien), seen from afar. It was then found necessary to bear far away to the left (S.), when a very winding and very stony path led down the really remarkable precipices which wall in the upper end of the Spiggengrund, the level valley being reached in 1.5 from Hohkien. The walk now became more agreeable, as the Spiggengrund is grassy and the parts well wooded. One of two bridges must be crossed to gain the

* *The Pioneers of the Alps*, p. 96. † *Alpine Journal*, vol. viii. p. 264.

‡ *Bernese Alps*, pp. 95, 96 of the 1875 edition.

§ P. 90 of the 1887 edition.

right bank of the stream, for the path bears away to the right high above it, in order, after passing through some very fine rock scenery, to descend into the Kienthal, the village of that name being gained in 1.50 from the further end of the Spiggengrund. After the village the char road ascends, though one is descending the valley, and leads to Reichenbach; but, as our destination was Frutigen, we took (55 mins.) a side path on the left to the hamlet of Kien (15 mins.), whence a dreary tramp, generally slightly uphill, brought us to our night quarters, at the Adler in Frutigen (1.25). Our times were thus: 4½ hrs. up, 6.25 down. But they are slow, as it was our first long walk of the season. I cannot say that the pass is very interesting, though there are many fine precipices and waterfalls on the way; but it is very lonely and unfrequented, so that though close to the Schilt-horn one might imagine oneself to be in some very remote district of the Alps, and not between two of the beaten Swiss tracks. The height of the pass is not very much less than that of the Kilchfluh
p ak.

W. A. B. COOLIDGE.

NEW GOVERNMENT SURVEY OF TYROL.—Our readers may remember that for the last twelve years, ever since its first publication, complaints have been constantly made in these pages by Mr. D. Freshfield, Mr. Holzman, and other travellers of the unsatisfactory character of the last survey of the Tyrol. These soon found an echo in Austria from the numerous tourists who now frequent the Eastern Alps.

But it is not often in our British experience that Government officers lend a ready ear to external criticism. We are glad, therefore, to find in the *Oesterreichische Alpenzeitung* the following announcement; and we cordially unite with Herr Meurer in his thanks to the directors of the survey for their resolve, and his hope for its speedy execution:—

‘In order to bring the maps of Tyrol into complete correspondence with those of the rest of the Monarchy, and to eliminate the errors of the first edition, the Directors of the Military Geographical Institute have determined to instruct their officers to make an entirely new survey of the Tyrol, and to construct on the basis of this survey new maps on the scale of 1:75,000. The survey will be completed in 1888, and the new maps given to the public at the earliest possible moment.’

REVIEWS AND NOTICES.

The Pioneers of the Alps. By C. D. Cunningham and Captain W. de W. Abney, R.E., F.R.S. (London: Sampson Low. 4to. Nearly 50 illustrations in permanent photo-engraving. 2l. 2s.)

It will probably be admitted that mountaineers, in describing their expeditions, have been by no means niggardly in their praises of the guides who have accompanied them, and have so largely contributed to their pleasure, safety, and success. Yet it was well that a special and permanent record of *la vieille garde* of the army of Alpine conquest

should be prepared whilst many of its members are still living, and, in the above-named very handsome and interesting volume, such a record has, I venture to think, been, on the whole, worthily and satisfactorily supplied.

The limitation to certain leading centres of climbing activity—Chamonix, the Bernese Oberland, and Zermatt—most familiar to our countrymen generally, and the judicious arrangement adopted in the selection of names have resulted in a very fairly representative gallery of portraits, and, though we may miss some—such as Victor Tairraz, for instance—for whom we should gladly have seen a niche reserved in this literary Walhalla, our thanks are due alike to the editor, illustrator, and general contributors for having so successfully carried out the object in view. Perhaps, too, as one who has had repeated opportunities of seeing in action at least twelve out of the entire number of guides included in the volume, besides being personally acquainted with several of the others, I may be allowed to congratulate the writers of the various notices on the absence of anything like undue partiality, and on their evident desire to present an accurately truthful picture of their favourites. Of course such a collection of articles by various hands, some of whom, moreover, do not pretend to much personal experience of the subjects of their notices, will show differences of knowledge and literary skill, but the names of the writers are a guarantee for the quality of their work, and, as a whole, the volume is, to my thinking, a well executed monument to the *élite* of a noble profession, and, as such, fills a gap in Alpine literature.

It is really refreshing to see how the authors warm to their task as they recall with evident enthusiasm the traits of character and *tours de force* of their respective leaders, and to me one of the greatest pleasures in reading the volume has been to dwell on the enjoyment which its production must have procured for them in thus doing their part to portray brave men to whom they owe such a debt of gratitude. It would be strange indeed if we did not feel a warm affection for those who are ready to risk their lives, if need be, in our service, and to whom we unhesitatingly entrust our own; a trust so fully justified by the striking fact that, with a single exception which involves no slur but rather a double meed of praise, no life has ever been lost in the expeditions—probably some thousands in number—with which any of the twenty-two guides selected for illustration have been connected.

In his chapter on 'Guidecraft' Mr. Cunningham quotes a noble but richly earned tribute to the great guides of the Alps from the pen of Mr. F. Pollock (p. 74). From numerous appreciative remarks of his own I have only space to quote the following (p. 77):—'We value the friendship of our guide as one of the best possessions and memories of the long seasons we have spent in the Alps.' Again, take this pregnant and epigrammatic reference to Johann Jaun by Mr. Middlemore:—'However distinguished his fellow guides he would always be esteemed as their leader; however ordinary their rank he would never seem to lead'; or Mr. Coolidge's touching cry of pain in reference to the sad close of Christian Almer's climbing career:—'And I have lost the brave and faithful companion to whom I owe some of

the happiest days I have ever spent, the recollection of which can only pass away with life.' Almer's name, by-the-bye, should have been added to that of Cupelin (p. 189) as having been compelled to go on the 'retired list.'

The volume consists of a series of nine introductory essays on 'The Growth and Development of Mountaineering,' containing much interesting matter, together with a note on the portraits by Captain Abney, succeeded by notices, varying in length according to the materials available, of twenty-two leading guides, accompanied by likenesses in permanent photo-engraving by Messrs. Annan & Swan's process from negatives by Captain Abney. It concludes with somewhat shorter 'in memoriam' biographies of thirteen other gallant leaders who have passed away, but most of whose names will ever be as household words in the story of the conquest of the Alps. The portraits, so far as my acquaintance with the originals enables me to judge, are mostly excellent, though naturally varying in merit and picturesque charm, some of the subjects being much better suited for artistic treatment than others. Ulrich Lauener is really a superb study and admirably rendered, suffering less than some of the others from the nature of his headgear, which in some instances, notably that of Melchior Anderegg, is of a rather tryingly clerical type. Probably the general retention of the hat is deliberate, either with a view of giving tone to the features or because most familiarly associated with our recollections of the original.

Perhaps the least satisfactory presentment in the book is the occulted portrait in the frontispiece. Can it be that of the editor, whom his friend Captain Abney has caught napping, or who thus disinterestedly sacrifices himself to point a moral? A series of two dozen or more charming vignettes and tail-pieces, rendering with delightful freshness various episodes of mountaineering, further adorns the volume and adds to its value for all who have the happiness to possess a store of Alpine memories.

I have said, I hope, sufficient to show my own high appreciation of the feast of good things provided for us by Mr. Cunningham, Captain Abney, and the other contributors, and I trust I may be pardoned if I now briefly refer, in no spirit of fault-finding, to a few points which seem to me to call for criticism. Unless the remarks at pp. 1 and 12 are intended to be restricted, like the guides themselves, to three districts, the ascents of the Gross Glockner in 1802 and those of the Ortler Spitze in 1804, 1826, and 1834 might, I think, have been referred to. Again, the brief allusion to the conquest of 'several of the minor peaks of Monte Rosa' (p. 1) is surely far from doing justice to the prolonged series of plucky, and to a considerable extent successful, attempts in the *massif* referred to, from 1819 to 1854, by the Vincents, Zunstein, Molinatti, Von Welden, Gnifetti, Madutz and M. von Taugwald, Puiseux and Ordinaire, Ulrich, the brothers Schlagintweit, and the Messrs. Smyth and Kennedy. At p. 20, whilst Dr. Forbes' charming 'Physician's Holiday' receives well-merited praise, the classic and epoch-making work of Professor J. D. Forbes, 'Travels through the Alps of Savoy and other parts of the Pennine Chain, with observations on the pheno-

mena of Glaciers' (Edinburgh, 1848), is not even alluded to; an omission which is only partially repaired by a reference to its author's labours in the notice of his guide, Auguste Balmat.

To my thinking, the disparaging remarks at pp. 31 and 33 as to the 'diminished prestige' of the Alpine Club and the banter about its meetings—I offer no opinion as to their correctness—might have been omitted with advantage as being altogether foreign to the presumed object of such a publication. Is it quite fair either to our noble selves to imply (p. 32) that our activity for the benefit of the general mountaineering world has been pretty much limited to the production of a general map of the Alps? Are Mr. Reilly's and Mr. Nichols' labours and resultant maps, the issue of the volumes of 'Peaks, Passes, and Glaciers,' the maintenance of the 'Alpine Journal,' the production of the 'Alpine Guide,' the encouragement given by our Winter Exhibitions to Alpine artists—all practically outcomes of the Club—the efforts to improve the Chamonix guide system, and the numerous subscriptions in aid of sufferers by fire or flood, as well as for other objects, in the Alpine regions, or for disabled guides and the relations of dead ones, to count for nothing? Though 'boasting be excluded,' may we not take credit for having conferred some real benefits on mountaineers? At any rate, I do not think that our Continental brethren seem disposed to criticise us from this point of view. Lastly, I read with painful surprise of the 'envy, hatred, and all uncharitableness which pervades Alpine controversies' (p. 44). Such a remark, I rejoice to say, could never have been justified in the earlier days of the Alpine Club; and, if it is now fairly or widely applicable, which I should be very sorry to believe, I none the less wish that it had not been recorded in this volume.

Did space permit I might take exception to one or two other statements of fact, but I should indeed be sorry if, in what I have frankly said, I should be thought to show a captious spirit or seem to detract in any degree from the opinion expressed at the outset as to the great indebtedness of mountaineers to all who have contributed to this volume; which, beyond question, succeeds in its main object of doing honour and justice to the gallant men whom we all, whether old or young, so heartily respect and so warmly love.

F. F. TUCKETT.

Shores and Alps of Alaska. By H. W. Seton-Karr. (Sampson Low, 1887. 8vo. 16s.)

We have already published in these pages* some account of Mr. Seton-Karr's attempt on Mount S. Elias, in Alaska. He has now given to the world a full narrative of his explorations in a handsome and profusely illustrated book. His whole journey to Alaska centred round Mount S. Elias. No important additions are made to the already published accounts of his climb, but there are many particulars given which will be useful to future explorers, not forgetting the detailed inset map of the peak and its surrounding glaciers. These glaciers

* *Alpine Journal*, vol. xiii. pp. 89-93, 177-8.

seem to project into the sea and to be of enormous extent, a calculation being given according to which they cover 18,000 *square miles*! It seems a pity that the party had not had more alpine experience, for of the three who actually tried the peak, Lieut. Schwatka and Woods had *never* had any experience of alpine snow work, or of the use of rope and ice-axe. In fact Mr. Seton-Karr was the only member of the party who knew aught of ice work, and he modestly tells us that 'an expedition comprising Swiss guides, or consisting of experienced climbers, would be more successful.' It would seem best *not* to land at Icy Bay, but to go across country from Yakatat Bay, and the western arête of the peak seems to offer no difficulties once it is reached. The height of S. Elias appears to be from 19,500 to 20,000 feet, and is supposed to be the highest mountain in North America, though our explorer makes out that this honour belongs to Mount Wrangel, a volcano lying some way N.W. of S. Elias. In point of appearance S. Elias reminds Mr. Seton-Karr of the Piz Roseg seen from the Roseg glacier. Lieut. Schwatka* claims that Mr. Seton-Karr's party, by reaching a height of 7,200 feet, 'nearly all of which was above the sea level,' made the 'highest climb above the sea level ever made, certainly the highest on an almost wholly unknown mountain.' Mr. Seton-Karr, however, in his book (p. 104) says, 'I had ascended to a greater height over the summer snow level than is possible to accomplish in Europe, the snow level on Mount S. Elias being 400 feet only above the sea level, owing to the heavy annual snowfall,' thus greatly limiting the statement of Lieut. Schwatka. As a matter of fact we believe that in the case of Elbruz (which is generally counted as being in Europe) the peak rises 7,500 feet above a snow level which cannot be put at a height of over 11,000 feet, and is probably less.

The book should certainly be consulted by anyone meditating an expedition in these parts, which include much entirely unexplored country, tempting alike to the naturalist, the mountaineer, and the sportsman.

Apart from the alpine portion of the work, it is amusing to find that, in order to get back from S. Elias to San Francisco, Mr. Seton-Karr had to make a long journey far to the north, nearly to the Aleutian islands! Some interesting accounts are given of the seal fisheries, and there is a description of a marvellous brooklet which was so full of salmon that their backs were bare, while in another they were so crowded together that, in the rush to escape the author, many were actually forced out on the bank, where they lay trying to get back to the shallow water. Life at Nuchek, where Mr. Seton-Karr was delayed two months, is very curious and original. There is a graphic diary of the one white man who ever spent a winter among the Copper River Indians, while among the illustrations the engraving (p. 225) of Sett-Shoo, an Oodiak boy, is perhaps the most curious. Clad in a short shirt, without trousers, socks, shoes, or hat, he crossed a snow pass without inconvenience! Here is a hint for restless mountaineers in search of some striking novelty.

* *Alpine Journal*, vol. xiii. p. 93.

The book is very unpretending, for it is simply the author's diary, jotted down from day to day, but it is freshly and brightly written, and gives us some really valuable information about a little known part of the world.

Illustrierter Führer durch die Alpen von Salzburg, Ober-Oesterreich, Steiermark, Kärnten, Krain, Küstenland und Berchtesgadener Land. Von Julius Meurer. (Vienna: Hartleben, 1887. 8vo. 6s.)

Illustrierter Führer durch die Zillerthaler Alpen, und die Riesenerferner-Gruppe. Von H. Hess. (Vienna: Hartleben, 1887. 8vo. 6s.)

Each of these works is a continuation of a previously published guide-book, each relates to the Austrian Alps, each is issued by the same publisher in the same series, and each is lavishly illustrated, though the woodcuts in point of accuracy or artistic merit do not reach a high level.

Herr Meurer has already published volumes on E. and W. Tyrol. His latest work completes his survey of the Austrian Alps. It takes in (roughly speaking) the country E. of Salzburg and Lienz, and W. of Linz and Laibach. These districts are not very well known to English travellers, who by the publication of Herr Meurer's painstaking 'Führer' are deprived of one more excuse for not visiting them. It is superfluous for us to praise the execution of this volume, for Herr Meurer is a practised writer of Alpine guide-books, and knows what to select and what to pass over, though in some cases English wants are perhaps rather different from those of Austrians. There are fifty-six engravings and seventeen maps and panoramas. The weak point in the book seems to be the maps, which are on a very small scale, and would be of no practical use to mountaineers wishing to find their way over the glaciers of a district hitherto unknown to them. We would gladly exchange some of the poor engravings for larger and more numerous maps.

Herr Meurer may be warmly congratulated on the completion of his Guide to the Austrian Alps. Well printed, portable, accurate, posted up to date, it will be indispensable to all travellers visiting the country. Mountaineers may soon hope to have much additional information made accessible to them by the publication of the 'Austrian Studer' (an historical account of the conquest of the Tyrolese peaks), on which Herr Meurer, with other specialists, is understood to be engaged.

If Herr Meurer's guide-book may be described as roughly answering to Mr. Ball's 'Eastern Alps,' that of Herr Hess more or less corresponds with Mr. Conway's Zermatt book (plus information as to roads and railways). It is a monograph on the Zillerthal Alps, and appears to be most exhaustive. Each valley and glen is taken in turn, and described methodically, minute information being given as to all the peaks and passes therein included. For reasons of practical convenience the Rieserferner group is included, though properly it ought to have been included in Herr Hess's former book on the Hohe Tauern. We are warned in the preface that scientific information is rigorously excluded, as only suited to the wants of a special class of travellers;

and we infer (from the preface to the Hohe Tauern book) that this head included all facts as to the Alpine history of each peak and pass. It seems to us that the author, in writing such a special guide-book, has made a mistake in not making it complete at least on the last-named point. The number of names and dates which would have had to be added is comparatively small, and would have been very useful. A graver fault is the total omission of any list of maps or books referring to the district, an essential feature of a special guide-book. There are fifty illustrations, four maps, and a panorama. We regret much that Herr Hess has not followed the good example he set in his former work in the matter of large-scale maps. Then he gave us two admirable maps of the Venediger and Glockner groups on a scale of $\frac{1}{300000}$ and $\frac{1}{400000}$ respectively, whereas now we are put off with a very sketchy one on a scale of $\frac{1}{250000}$ only. This omission can certainly not be due to want of material. Herr Hess's book is so good that one can afford to grumble at minor faults—it is only a good book which deserves criticism. We hope that he or some one else will soon monograph the Oetzthal and Stubai-thal groups—they seem as yet to rejoice in no detailed guide-book of their own.

It may be added that in each of these books the tariff for guides at the different centres is usefully reprinted at length, for it is very complicated and minute, demanding prolonged study before it can be mastered. Finally we would call attention to the fact that special guide-books have now been published on the groups at the two extremities of the chain of the Alps, Tyrol and Dauphiné, whereas the Swiss Alps, though explored at a far earlier date, are almost destitute of similar monographs, while these special guide-books are fast superseding more general and more unwieldy volumes.

Le Mont Blanc et ses Explorations. Par A. S. de Doncourt. (Lille and Paris: J. Lefort, 1887. Small 4to. 6 francs.)

This book is one of the most shameless and unabashed pieces of book-making it has ever been our fortune to come across, even when we bear in mind that it was probably hurriedly got up for the De Saussure fêtes last summer. The text covers 216 pages, of which no fewer than 152 are taken up with a reprint of De Saussure's narratives of his attempts on and ascent of Mont Blanc, his sojourn on the Col du Géant, and his journeys to Chamonix and round Mont Blanc, passages being occasionally omitted and connecting sentences supplied by the editor or copyist. Now De Saussure's works are not very inaccessible, and if only the non-scientific portion of them is wanted, that can be found in the 'Partie Pittoresque des ouvrages de M. de Saussure,' published at Paris by Fischbacher, and costing only 3.50 francs. There is a preliminary sketch (15 pages) of De Saussure's life, superficial, inflated, and partly made up of large extracts from an unnamed work. The last forty-nine pages are taken up with various extracts from various writers. Thus Viollet le Duc is drawn on for the orography of the group (3 pages), Mlle. d'Angeville describes the fauna and flora of the Alps (8 pages), M. Le Tertre the 'Tour du Mont Blanc' (14 pages), M. Talbert the Alpine Clubs (8 pages), and an unknown

writer the roads and railroads of the Alps (10 pages). There is one chapter which seems entirely due to the pen of M. de Doncourt. It is that on Alpine accidents and the means of preventing them. Its value may be gathered from the fact that it covers six pages and is disfigured by numerous mistakes in names, dates, and general matter. This last is a failing which also appears in other parts of the book, even when the text is copied from some other writer; perhaps the most amusing case being that in which we are told, as a sort of climax, 'Enfin MM. Lammer et Lorria ont gravi sans guide la terrible Dent du Chat (1885),' the Dent Blanche of course being meant. Of the thirty-six engravings, it must suffice to say that many of them have no relation to the text (*e.g.* Davos, Rhine rapids at Schaffhausen, &c.), that they are generally hopelessly irrecongnisable and always execrably cut, and that the names are often quite wrong (*e.g.* the well-known view from Rosenlauri is described as 'Engelhorn, Wildhorn, Winterhorn'; in another the Eiger and Mönch are lumped together as 'La Jungfrau'). We would recommend anyone into whose hands this wonderful book falls to study the frontispiece (*L'Avalanche*) and the cut on p. 121 (*Guide et Touriste dans les Alpes*)—they will find an entirely new light thrown on objects with which they doubtless imagine themselves tolerably well acquainted.

Seriously speaking, we cannot imagine for what possible readers this pretentious and absurd volume is meant; it can be of not the slightest value or interest to any living person save M. de Doncourt himself. The odd thing about it is that he evidently thinks he has rendered great service to the Alpine world, and naïvely confesses his extensive borrowings, giving the names of his authors, and using marks of quotations very lavishly. This honesty is the one merit of the book.

Società degli Alpinisti Tridentini, XI Annuario, 1884-5; XII Annuario, 1885-6. (Rovereto.)

Since we last noticed the publications of this prosperous and industrious body two volumes of 400 pages each have borne witness to its continued activity. Its Alpine field may be defined as embracing the Adamello-Presanella Alps, the southern wing of the Ortler, and three of the most remarkable dolomitic groups, the Rosengarten, the Primiero, and the Brenta peaks. There is little room now left for new ascents or passes amongst these inaccessible-looking but not invincible pinnacles. The time has come for minute topographical studies, for settling knotty questions of nomenclature, for comparing or combining different excursions so as to procure for the traveller the maximum of fine scenery or amusing scrambling.

Perhaps the most important piece of solid work in these volumes is the collection of the true local names of the peaks and passes of the Rosengarten Gebirge, which had been somewhat needlessly Germanised by Herr Merzbacher. It seems an omission in the accompanying map that the fact that the Forca di Davoi (Tchagerjoch, 'Alpine Journal,' vol. x. p. 72) leads to Tiers, and the adjoining Passo delle Coronelle to Welschenofen is not indicated. And the statement that the Forca di

Davoi does not command a fine view is entirely erroneous. *Crede experto*. We find also a careful paper on the N. portion of the Brenta group, the curious ranges at the head of Val Flavona; the inevitable ascents of the Cimon della Pala and the Pala di S. Martino; and an account of how to go on from the Cima Tosa to the top of that noblest of towers the Crozzone di Brenta. A useful list of 51 'patented' guides and their qualifications is added. The Society, it appears, numbers over 830 members, so that if a fair proportion of them are active the guides can seldom want employment!

In studies on subjects of interest connected with Alpine districts the Trentine volumes are always rich. Here we can only refer to Dr. Fratini's Physical and Historical Notes on Primiero and the Canal S. Bovo, Dr. Bolognini's continuation of his notes on the legends of the Trentino, and several papers on local customs and usages. An article on 'Bears in the Trentino' contains some good hunting stories, an interesting sketch of the old hunter Luigi Fantoma, known as the Rè di Val di Genova, whom Payer immortalised, and some astonishing statistics as to the number of these beasts slain in recent years. Another on Alpine roads and inns abounds in sensible suggestions to local authorities desirous of attracting strangers. Molveno still waits for its landscape to be completed, as the author remarks with regret.

The volumes are fairly provided with illustrations, amongst which, as usual, those from drawings by Mr. Compton are pre-eminently equal for accuracy and artistic power.

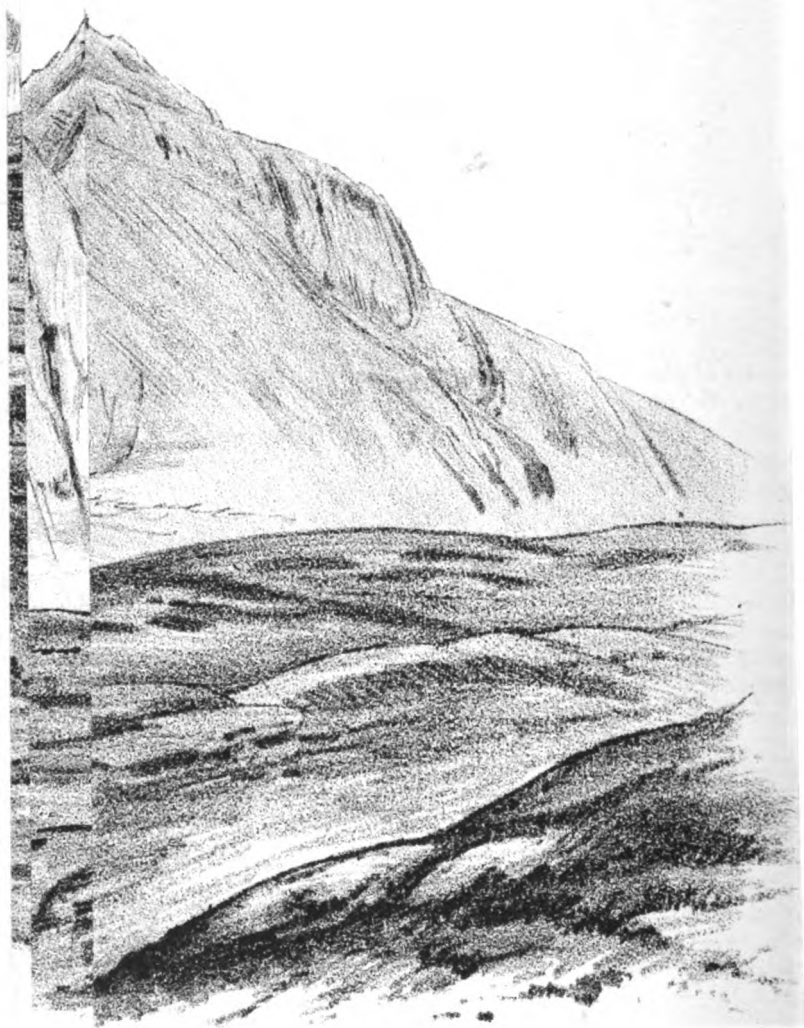
D. W. F.

Postscript.

AT the last moment before going to press we learn that another fatal accident in the Alps has occurred, of which the following particulars have been communicated to us by a great friend of the family. On Friday, October 13, at 7 A.M., Miss Alice Barker, of Albrighton Hall, Wolverhampton, started, with a local guide, from the Hôtel Bregaglia at Promontogno (between Chiavenna and the Maloja Pass) up the Val Bondasca, to visit the glacier. Snow lay deep on the ice, and the walking was consequently very trying. After having reached a height of about 10,000 feet Miss Barker's strength failed, and becoming exhausted with the intense cold, she died in the arms of the guide shortly after having commenced to descend. The guide brought the body as far down the glacier as he could, and then went to Promontogno for assistance. Miss Barker's niece, Miss Florence Barker, was so overcome by the sad news of her aunt's death that she was taken ill and died at Promontogno on Sunday, October 16. Both bodies have been brought to England for interment.

Errata in last Number.

Page 382, line 40, for 'Six Madun' read 'St. Anna.'
 " 336, " 7, " 'pass' read 'peak.'



*Christ
Peak*

THE
ALPINE JOURNAL.

FEBRUARY 1888.

(No. 99.)

THE BLACK COOLINS.

BY CHARLES PILKINGTON.

(Read before the Alpine Club, December 13, 1887.)

‘THE Alps of Switzerland are exhausted;’ at least so say some members of the Alpine Club. ‘The mountaineer must now go farther afield if he wishes to see new country and climb fresh peaks.’ I may add, he must go to the Andes, the Caucasus, the Himalayas—or Skye. A few members of the Alpine Club have done their duty, and this paper is to record the doings of five or six of the more adventurous, but not younger members of the Club.

The position of the island of Skye is well known to most geographers, and even to some ordinary mortals, but the mysteries of its shape have only been revealed to few. The island is fifty miles long by twenty-six broad, and there is no part of it five miles from the sea. Beautiful bays and rugged inlets pierce the island in every direction and form one of the great charms of the scenery. The Black Coolins are a group of mountains on the southern coast, black in colour, of wonderfully bold outline, and formed of gabbro. The greater number of them rise immediately round Loch Coruisk, forming a rough horseshoe, their pinnacles breaking the sky line in bold and rugged shapes. Another half-circle starts from the north side of the horseshoe and ends in the beautiful horn of Sgurr-nan-Gillian, enclosing in its sweep the wild Harta Corrie. The range of Blaven is completely detached, a deep valley running between it and the other mountains. Beyond this valley and to the N.E. of Sgurr-nan-Gillian lie the Red Coolins, whose rounded forms and deep red colour enhance the beauty of their black and rugged brethren.*

* ‘These igneous intrusive masses consist of two different kinds of
VOL. XIII.—NO. XCIX.

This is a very short and rough description of the group, but, aided as it is by Mr. Williams' excellent panorama, enough for the present paper, in which I shall only attempt to describe some of our scrambles among these Black Coolins, and a few of the impressions left on the memory after several visits to Skye by Horace Walker, Eustace Hulton, Heelis, my brothers, and myself. We were not all there together, but amongst us, and in varying combinations, we made four short visits to the mountains.

My first visit to Skye was about eighteen years ago. Fishing was the end we had in view. Dried-up streams and blue sky were what we found. We tried to catch impossible fish, but, failing, contented ourselves with crossing a humble pass or so. My next, in 1880, was to examine a moor. The traces of grouse on the particular part of the island we visited being scarcer than the traces of ancient glacial action, we did not take the shooting, but went on to Sligachan, and late on the same afternoon started for Sgurr-nan-Gillian. Two of us were members of this Club and thought little of Skye hills, so we went straight at the N.W. face of the mountain. After failing to get up we saw that the W. ridge was easy enough, but as it was getting late we postponed our ascent till the following day. I must say we felt rather small, as an elder brother, who was not an Alpine Climber,

crystalline rocks, granite and gabbro; and the contrasts between their modes of weathering are exhibited in their most exaggerated form in the island of Skye. The granite masses of the Red Mountains, culminating in Beinn Glamaig and Beinn-na-Cailleach, are as remarkable for their strikingly smooth and pyramidal forms as the gabbro masses of the Cuchullin Hills and Beinn Blabheim are unrivalled for their wild, jagged, and fantastic outlines. . . . The gabbros of the Cuchullin Hills and Blabheim pass insensibly into dolerites and basalts, and are traversed by many "contemporary veins."—J. W. Judd on the 'Secondary Rocks of Scotland,' *Quarterly Journal Geological Society*, vol. xxx. No. 119.

The gabbro of the Black Coolins was 'intruded' during a volcanic era of much later date than the granite of the Red Coolins, for the basaltic lavas of the later (gabbro) volcano overlie in many places the weathered and denuded surfaces of the granite and felspathic lavas of the older one. After careful measurements of the inclinations of the layers of lava still left, and comparisons with existing volcanoes, Mr. Judd estimates that the cone of the Skye mountain must have reached the height of 10,000 to 15,000 feet above the level of the sea, and that it once covered the whole of Skye and the then surrounding land with layers of lava of immense thickness. Most of this, like the cone itself, has since been swept away.

was one of the party. We certainly returned with a much greater respect for the mountain than we had when we started in the morning, beautiful as it had appeared to us on our drive from Portree to Sligachan; but our admiration for it has not faded away, although we now know it can be climbed from every side and edge, with the exception, perhaps, of the centre of the N.E. and N.W. faces. It is a climb though, by whichever way it is ascended, and the summit is a real mountain-top, a ridge of shattered stone, a jump from which in any direction would relieve you from the payment of your next annual subscription to this Club. The W. ridge is broken into all kinds of graceful pinnacles, and affords a most interesting climb. The direct N. ascent of the mountain is even more interesting, and the three magnificent needles forming its N. crest present enchanting difficulties, if scientifically taken from Corrie Basteir, on the west.

The view from Sgurr-nan-Gillian is very beautiful; its details, however, are not vividly impressed upon my memory; but I do remember very well how, when, two days after the failure just recorded, we were climbing the steep W. face of Blaven at about seven in the morning, in a thick mist which had covered us all the way from Sligachan, the vapour gradually became lighter, and a little sunlight came through, and how by degrees the cloud curled back, showing a sea of mist over the valley below, whilst high away to the left a small black pinnacle soared up into the sky. It was blotted out again for a moment, only to return in company with another, and while we gazed Sgurr-nan-Gillian, with all his pinnacles bathed in the morning sun, appeared majestically above the mist, which hid the other mountains and covered the valleys with a silver shroud.

My personal experience of Skye weather is, that it is the driest place in the British Isles, for I have been there three times, spending at least ten days on each occasion, and have only had four hours' rain in the three visits. I believe, however, it is 'a wee bit moist' sometimes, as Walker, Hulton, and my brother Lawrence found to their cost in the autumn of 1883. My brother writes of this expedition, 'For three weeks it rained more or less every day: when the barometer fell it rained cats and dogs; when the barometer rose a sea mist crept up the hills in the morning, and turning into a persistent rain did not clear off until the evening. Indeed it was only by getting up determinedly at 5 A.M. whenever the glass showed signs of rising, and walking sometimes eight or

ten miles to the foot of our peak, and then waiting hours for a break in the weather, that we were able to make any ascents at all. For nearly three weeks we waged this unequal contest, but amongst other expeditions succeeded in climbing Bidien-drum-nan-Ramh, Sgurr Alister, the Old Man of Skye, and Sgurr Dubh. The quantity of rain which falls on, and the rapidity with which it drains off, these mountains is indelibly impressed on our memory. Once, having started from Sligachan for the Inaccessible Pinnacle and having reached the upper part of Corrie Labain, we were caught in a violent storm of rain and mist from the S.W. We were unable to find the Old Man of Skye, and we waited for two hours, hoping for a break in the weather; but, as the storm increased, we had to return, drenched to the skin. Reaching the opening to Corrie-na-Creiche on our way back over the moor, we found the stream a raging torrent and not the pleasant little burn we had stepped across in the morning. We had to ascend high up into the corrie, and at last, in the dark, and shoulder to shoulder to prevent our being swept away by the force of the torrent, we struggled across to the other side.'

This year, at the end of May, Walker and I (without the assistance of Eustace Hulton, who, greatly to our regret, was unable to accompany us) introduced Heelis to the Coolins, under very different circumstances. Having spoken of them in glowing terms, we were anxious he should not be disappointed with his first view of those famous hills. We steamed N. from Oban on a bright breezy day through the Sound of Mull, round wild Ardnamurchan Point, and past the blue islands of Muck, Eig, and Rum, till at last Skye came well in sight, and there against the now glowing western sky the serrated range of the Coolin Hills stood out grandly about twenty miles away. We got the telescope out and named the peaks to our own satisfaction, though not without several warm arguments between Walker and myself. Heelis was impressed that was the main thing. There is hardly any night at that time of the year, and the long evening got gradually more and more beautiful as the near mountains became darker and softer like rich velvet pile, and the distant islands were black purple against a sea of fire. The stars came out as we cleared the narrows between Skye and the mainland; but the twilight remained, enabling us by its weird and hazy light to get indistinct views of the islands of Scalpay and Raasay as we passed, thus compensating us for the steamer being seven hours late at Portree.

Early next morning we drove on to Sligachan Hotel and spent the rest of the day amongst the pinnacles of Sgurr-nan-Gillian.

Unfortunately, though well situated in many ways, Sligachan is at the extreme N. end of the Coolins, three miles of moor lying between it and the nearest mountain. Five miles of ankle-breaking and temper-destroying track leads through Glen Sligachan, and has to be traversed before the Blaven range can be reached; and it is at least ten miles over the moor to the foot of the fine peaks on the S. side of the group. We wanted a Riffel for our Zermatt, and we found one at Glen Brittle, for through the kindness of Mr. Mackenzie, The Macleod's agent at Dunvegan, we had arranged to spend some part of our time at Glen Brittle House, on the W. side of the group and close to the base of the hills. So after climbing some of the peaks near Sligachan we started for Glen Brittle, meaning thoroughly to explore Coire-na-Creiche on the N.W. side of the group, and the rocky peak at its head on our way; sending one—John Mackenzie, whom we had engaged as a handy man—some fifteen miles round by the track with a cart loaded with bedding, provisions, and Heelis's camera. I hardly know why I choose to describe this expedition more than any other; it is, however, characteristic of Skye climbing, and was certainly a surprise to us, for, judging from the map, we started up one mountain and found ourselves on another when the climb was done.

Leaving the path from Sligachan to Brittle at the top of the pass, we skirted the slopes of Bruach-na-Frithe on our left, and reached the head of the Corrie without losing height. A bold rocky buttress, extending from our mountain on the main range, divides the Corrie in two. We started up the N. branch,* and, as the sides were steep, we scrambled along the bed of the stream over large boulders for some distance, till easier ground followed. On our right rose a fine rock peak which we knew must be our mountain, though whether the highest point or not we could not tell. At last, working our way up over screes mixed with rock and snow, we gained the ridge and saw a sight that I am sure none of us will ever forget. The other side shot steeply down to Harta Corrie, and opposite to us rose the range of Sgurr-

* This N. branch of Corrie-na-Creiche is wrongly called Corrie Mhadiadh, for Sgurr Mhadiadh lies to the S. of the southern branch, called Tairnelear, its highest peak being at the junction of the Thuilm ridge with the main chain.

nan-Gillian. The ridge separating Glen Coruisk from Harta Corrie was far below us, and all the rocky peaks on the other side of Loch Coruisk were well in view, a splendid wall of dark ultramarine colour. Whether we saw Loch Coruisk itself I cannot say. What does it matter so long as the remembrance of that solid dark blue and jagged ridge remains, and that we do not forget how the green and blue sea came up Loch Scavaig and all around the base of the hills; and how the purple islands of Rum and Eig came out of a sea that Italy might have envied; and how in the distance the whole range of the Scottish coast from Ben Cruachan to the mountains beyond Ullapool glowed in the soft sunlight, relieved by patches of cloud and shade and the glittering snows of Ben Nevis? One of us said, 'Well, this is the most beautiful view I have ever seen.' He was allowed his fling and not contradicted at the time. Some days afterwards we argued the question out, with the professional assistance of Mr. Alfred Williams, whom we had the good fortune to meet at Sligachan; the verdict being, that we may have seen grander forms in the Alps, and as beautiful colouring in Italy, and we *may* have seen many views of equal loveliness, but know of none to *beat* it for beauty of colour combined with grandeur and variety of form.

Like most of the Coolins, the peak of our mountain was of solid rock, no grass or earth finding holding ground to rest on.* The northern ridge rose steeply in front of us, falling away precipitously in great rough slabs on the E. side, whilst to our right it was cut off in broken cliffs. We soon joined the first summit, only to find ourselves separated from the next and highest by a wall-sided dyke, which forms a characteristic stone shoot, descending on either side of the ridge. Into this dyke we let ourselves carefully down and looked for a way up the next peak. To the left, on the E. face of the peak, there was a possible passage up a crack for a short distance, but it ended in some nasty slabs sloping out towards Harta Corrie; we therefore

* Speaking of 'the basic crystalline rocks of the Western Isles,' Mr. Judd says, 'Acted upon very slowly by the agents of atmospheric disintegration, the rock-surfaces assume a remarkable roughness, owing to the persistence of the crystals of diallage and augite, acquiring at the same time a deep brown tint from the peroxidation of the iron; and moreover these surfaces, not giving rise to the formation of soil, are altogether destitute of any covering of vegetation.'

hesitated before trying it. Walker had been thinking for some time that our peak bore a striking likeness to a three-headed castellated one which he had climbed with Hulton and my brother from the ridge dividing Harta Corrie from Glen Coruisk. He was now confirmed in his opinion. We therefore determined to explore it thoroughly from the W. (which really meant that we did not like the look of the smooth slabs). We descended the stone shoot to the right, skirted under our peak by a patch of snow, and kicked our way up a snow gully on the other side of it. Looking up at the head of this perpendicularly-sided gully, a smooth black rock seemed to bar the way. There might be an outlet, however, at the top corner; one never knows what to expect in a basaltic dyke; but we were hardly prepared to find that the steep black rock in front was a tremendous stone, forming a natural arch from the central and highest to the southern peak, and making a magnificent frame for the view straight down on to the head of Loch Coruisk, below. Passing under the arch and turning to our left, an interesting scramble soon brought us to the mossy summit of our mountain, where we found the small stoneman built by the others four years ago.

Writing to me of their ascent, Hulton says, 'Ascending from Harta Corrie, we gained the ridge between it and Loch Coruisk, which from this point seemed to lead straight to the summit; but we soon found the direct ascent cut off by a series of dykes, and were forced to work along below the crest to our right until we gained the foot of the mass of rock forming the peak itself. Here we regained the crest and traversed a ledge on the Coruisk side of the mountain, until it lost itself on the face of the cliff. A long reach and a lift from below enabled us to gain the next point, whence a series of narrow ledges and long lifts, first above Glen Coruisk and then above Harta Corrie, brought us to the top of our mountain, a fine moss-covered summit, with no stoneman to mark a former ascent. We meant to have descended by the N. ridge, but the rocks looked so smooth that we did not attempt it.'

We enlarged the cairn they built, and then took bearings of all the principal peaks round us with a prismatic compass. As they seemed to read very curiously, I went over them again quickly, steadying myself on another rock. They were all more or less wrong. Now, having an engineering reputation that requires maintaining, being not yet good enough to maintain itself, I had to explain to Heelis

that the compass had not been used for a considerable period, that it must be strained or dirty and not sufficiently free. We examined it and then placed it on a stone: the needle went right round at once and scoffingly pointed south. The rocks were magnetic, some more, some less: the bearings were useless.

We descended by the way we had come up, as far as the bottom of the snow gully; then we turned to our left instead of to our right, and crossing the ridge projecting into Coire-na-Creiche, we went down a long shoot of screes into the southern half of the corrie called Tairneilear (the Thunderer) and thence by the slopes of Thuilm to Glen Brittle. Brittle House is a good-sized square building, with all the usual collection of sheds and outhouses belonging to a large sheepfarm. When we were there it was unlet, but worked by a manager for The Macleod. We found Mackenzie, our 'guide, photographer, and friend,' had come over safely with the luggage and camera, so we were soon comfortably installed in the unoccupied front of the house. I camped in a corner of the large drawing-room, which I had all to myself, with no furniture to bother me except a small four-legged object holding a jug and basin. The dining-room contained chairs and a large sideboard, where we 'cached' our provisions. We spent a pleasant evening and had a long talk with our host. He confirmed our opinion that there was little animal life in the higher mountains. There are a few deer, but this year we only found the body of a young hind that had fallen over a cliff. There are also foxes and hares. We had seen several eagles sailing round the peaks, and once a golden eagle, sufficiently near to appreciate his tremendous sweep of wing as he alighted on a rock tower close above us. We were glad to hear that The Macleod objects to their being killed, though they may take a lamb or two from the flocks. A few ravens, hawks, and ptarmigan make up the list, though there are of course grouse and the usual moor birds below.

In exploring a new country it is always well to record every fact tending to the advancement of science. Indeed, in one of the latest Alpine books published this Club has been taunted with its decadence from the glorious past and its present general uselessness. To escape our being included in this sweeping denunciation, I wish to state that Walker and Heelis made the astonishing ornithological, and to them troublesome, discovery that the cuckoo does not sleep. Walker timed one carefully every hour of the night,

and Heelis said it sat on the roof and shouted down the chimney.

Next day we spent in Corrie Labain (pronounced Laggan), one of the finest and wildest hollows of the Coolins—a steep, short glen, whose rocks are wonderfully rounded and smoothed by ice, with a small loch at its head. The upper part of the corrie is filled with tremendous slopes of screes, coming steeply down in every direction. The main one on the left comes down from the very top of the depression on the S.E. of Sgurr Dearg; over it lies a short, rough pass into the head of Glen Coruisk, while the narrow, wall-sided shoot to the right runs up between the N. and the highest peak of Sgurr Alister, and forms an easy but disagreeable way to the summit of this grand mountain, whose magnificent precipices rise steeply above the loch in large, bold masses of rock whose sharp points and bold ridges show so well from the neighbouring peaks. The head of the corrie is closed by a nameless mountain, well known by its peculiar shape, and which Mackenzie and others said had never been climbed (probably because no one ever had cause to do so). Two of us photographed, whilst the other two climbed the N. peak of Alister by the difficult and precipitous rocks facing the corrie. As there was no stoneman we built one, and, descending on the other side, gained the head of the great stone shoot from the E., whence we easily reached the highest summit by its N. edge. The top is a very sharp ridge overhanging Corrie Labain on the one side and shooting steeply down in broken ledges to Corrie-na-Ghrunnda on the other. The upper part of this latter corrie—which we unfortunately did not explore, owing to circumstances over which we had not sufficient control—is a bare glacier worn hollow, with a lonely loch in its centre; the rocky slopes falling to the lower part of the corrie look so steep and ice-worn from below that I believe it might be difficult to find an easy way down.

Our descent of Alister was made by the S. ridge, or as near to it as possible. We often had to circumvent rock towers and needles, and at one place were forced far out on to the steep E. face by an uncouth obelisk of extraordinary size and shape. The other party climbing up to this ridge in 1883 from Corrie Labain, seeing these obstacles, had worked up the W. face under the ridge, only striking the crest close to the summit after a fine rock climb. We gained the depression between the central and S. peaks—a weird, wild, and ruinous spot—a steep, narrow saddle which we crossed,

and then away over the rounded S. peak, and across the moor for a bathe in the shallow, sandy Loch of Brittle.*

That evening, looking up at the hills, glowing in the light of a red sunset, we saw a most peculiar lump of rock, seeming to rest on the rounded top of the peak or buttress separating Corrie Banachdich from Corrie Labain. Climbing this buttress next morning, we found that this stone was in reality the large detached rock three-quarters of a mile away, on the W. end of the Old Man of Skye, as the highest point of Sgurr Dearg is named. This needle, usually called the Inaccessible Pinnacle, is the Matterhorn of Skye. It is an immense slab of hard trap rock which has been left whilst the softer rock which once surrounded it has decayed, and is now to be found in the screes of Corrie Labain and in the old moraine on the moor below. The pinnacle, rising precipitously for over a hundred feet on the S. side, falls in one perpendicular drop of 300 or 400 feet on the N. As the mountain on which it stands also shoots steeply away on either side, the eye seems to plunge immediately to the bottom of Glen Coruisk, 2,500 feet below, giving an additional feeling of insecurity to anyone who, clinging to the narrow E. edge (on which he may be seated astride), feels the whole slab vibrate with the blow of a falling rock that he has levered out from the crest above, as actually happened to me on the first ascent. The pinnacle had attracted much attention in the district, and had often been attacked by local climbers; but it deserved its name of Inaccessible till 1880, when my brother and I climbed it by its E. edge. The following year a shepherd got up, after having first taken off his shoes. It was then unclimbed till Walker, Hulton, and my brother made the third ascent in 1883, since which date it has been ascended several times. In 1886 Mr. A. H. Stocker and Mr. A. G. Parker climbed it by its western end. Desirous of following their example, and

* The nomenclature of the peaks forming the Alister group is very confused. Sgumain is the name on the Ordnance map, but it is carelessly placed over all the three peaks. This name is given by the shepherds to the S. peak only. The highest peak is always called Sgurr Alister, after Mr. Alexander Nicholson, who made the first ascent, and who, as Sheriff Nicholson, is so well known in the district as one of its most ardent admirers and explorers. We would suggest the name of Sgurr Labain for the sharp N. peak. We jokingly called the nameless peak at the head of the corrie 'Pic Mackenzie,' after our gillie, who went up with us, and we hear that it has since been known as Sgurr Mic Coinnich, the Gaelic equivalent.

having reached this end of the rock, we asked Mackenzie, who had come with us, to carry the camera, if he would like to go with us. He had done it from the other side before. 'Oh, yes,' was his ready reply. Off went his boots and we tied him on to the rope. I believe his great anxiety for some time had been that we might send him round with the luggage to the other side and not give him a chance of the climb. The first few steps were easy. We then traversed a little ledge, about six inches wide, to our left, leading on to the N. face for about 20 feet. As we stood in turn upon the highest part of this ledge (it descended a little beyond) a smooth, slanting rock came down, its edge ending about halfway up our chests. The next step or wriggle was the difficulty. It would have been fairly easy had the standing-place been firm and good, but it was a narrow piece of hard, slippery trap, and shook slightly when tried with a stock. We slowly and steadily drew ourselves up till we landed flat on the steep, smooth incline above. Very steep and smooth it was, and care was required as we wormed ourselves slowly up for about 10 feet, till we found on the left a good crack large enough for our fingers. The difficulties were over when that was accomplished, for a few changes of hand along this ledge slid us under a rough, upright rock, a swarm up which landed us on good holding ground on the W. end of the pinnacle and about 40 feet above its base, whence two minutes' pleasant scramble took us past the extraordinary bolster stone and on to the highest point beyond.

We descended by the E. edge, which we found easier than we expected. No doubt it is easier now; for on the first ascent very great care and labour were required to pull out stones, loose but still forming part of the natural rock, and often the whole of the edge, which by the way is only six inches to a foot wide in many places. Of the two routes the W. is the shortest and most difficult, the E. is the longest, the finest, and most sensational; both require care, and a slip from the E. edge would be fatal.

We climbed the nameless peak at the head of Corrie Labain in the afternoon from the pass between it and Sgurr Dearg, and built a cairn on its summit—a fine, easy climb with precipitous rocks on either side of the ridge. As we had left the camera at the pass we had to return the same way, but we looked at the descent on the opposite side and thought it seemed very difficult. Photography and sketching do not always help the mountaineer on his way; but botany

did not seem to detain Mr. J. C. Hart, of Dublin, who, with Mackenzie, has since crossed the pinnacle on Sgurr Dearg, passed over this nameless peak, descending by the difficult drop, and Sgurr Alister in one day, and found, amongst other Alpine plants, 'Arabis Alpina' for, I believe, the first time in the British Isles. He confirms our opinion that Alister is the highest mountain in Skye. His barometer gave 3,260 feet as its height. Another day we walked round the S. side of the group and paid a visit to Williams, who was sketching in a cabin at the head of Loch Scavaig. He received us only too hospitably, and out of holes in the barren rock he brought bottles of beer, cold beef, and other luxuries. His cabin was cleverly and securely built of light boards, the result doubtless of much experience, and was quite good enough to sleep in if necessary. We worked hard at the good things produced, and spent a long time basking in the sun and giving our host useful hints in water-colour sketching, for which he seemed very grateful, judging from the quantities of bottles of Bass that he lavished on us in return. It therefore fell out that late in the afternoon, being beaten by a trap dyke high up on the N. ridge of Sgurr Dubh, and having to descend right into the corrie to circumvent it, we gave up the expedition and returned the way we came. Do not blame us—blame the view down Loch Scavaig on that bright and sunny day, the clear and variously coloured water, the masses of brown tangled seaweed, the white gulls sailing past the black rocks and standing out against the dark blue sea beyond; the perfect stillness, broken only by the occasional cry of a tern; and the grandeur of the dark Coolin cliffs towering above the W. side of the bay—and forgive us for not having crossed the ridge and explored Coire-na-Ghrunnda, on the other side. We were somewhat consoled for our defeat, however, by Walker telling us that he had made the ascent with the others in 1883 by a fine rough scramble from Corrie Lachain, one of the upper hollows of Glen Coruisk.

On our way back to Sligachan next day we had a fine climb up the W. face of Sgurr Greadaidh (pronounced Greta), and then, crossing two of the four tops of Mhadiadh (pronounced Vátee), including the highest, we descended into Corrie-na-Creiche by the splendidly shattered ridge leading towards Sgurr Thuilm.

On the suggestion of Mr. Williams we spent our last day in making the first ascent of Sgurr-na-h-Uamha, the out-lying and E. peak of Sgurr-nan-Gillian. Mackenzie said

that he had tried it from the Harta Corrie side, and found the rocks too smooth, as indeed they looked; and also by the N. ridge connecting it with Sgurr-nan-Gillian. Leaving Glen Sligachan, we climbed towards this ridge, but some distance below it we turned up the conspicuous gully to our left. It is steep and leans to one side, being in fact more a break in the rocks than a real gully. By a capital scramble up this crack the upper and easier part of the mountain was gained and the top reached.

Amongst other scrambles we made the first ascent of Clach Glas, a small peak to the N. of Blaven. Seen from Glen Sligachan, a dark cleft runs up the centre of the mountain for some distance; climbing up this, and gaining the upper part of the ridge, to the right or S. side of the actual summit, we found a knife edge of tremendous steepness coming down towards us. We put on the rope and nerved ourselves for the attack; we just had a look round the edge first, and seeing a piece of slanting rock, we crossed it, and, pulling ourselves out of the neck of a little gully, walked up the impostor in a few minutes. It is a pleasant climb, however, and the magnificent N. ridge of Blaven shows a splendid jagged outline on the way up: this ridge, unfortunately, though imposing from below, is a fraud from above, as the whole E. face of the mountain is smooth and easy.

Our experience of the country induces us to say, Go early in the year, at the end of May or beginning of June, when the days are long. Take a rope and one of Silver's gourds, for water is hard to get on the rocks and you are often rock-climbing for hours at a stretch. We took no axe, but the snow lies long in the deep gullies, and, though we never wanted one, had the nights been very cold we should have had some trouble. Sligachan Hotel is most comfortable, and only twenty-four hours from London *viâ* Euston or King's Cross, Inverness, Strone Ferry, and Portree. Mr. Sharp, the landlord, is very obliging, and knows how to carry out any arrangements you may wish to make. Mackenzie you may find a pleasant, willing companion and a good rock-climber. He quickly learnt the use of a rope amongst loose rocks and recognised its value. He likes climbing for its own sake and enters thoroughly into it. Doubtless there are other men as good, only they want bringing out. If I am the means of inducing some of you to go there you will thank me more hereafter for having read this paper, than now for keeping you so long. We who *have* been have gone again, and advise you to go. You will not be disappointed. Some of

the peaks have unclimbed sides, and many of the passes and carries are almost unexplored and only waiting for energetic climbers. There is much to interest the scientific mind in the geological formation and the wonderful traces of ancient ice, weird and beautiful shapes and colouring for the artist, the crofter question for the politician, and for the engineer a magnificent and complicated system of mistakes on the Ordnance Map, unequalled in the British Isles.

RAMBLING REMINISCENCES OF ABOLLA.

BY WALTER LARDEN.

IT is a melancholy truth that, as we get older, we make enjoyment more and more of a business; we plan and we arrange, until pure enjoyment becomes almost impossible; in fact, we are much in the position of a cook with respect to the dinner that she (or he) has provided—we know too much of its preparation to enjoy it thoroughly. I remember, when I first went to Switzerland, being much struck with the truth of the above. All around I saw the machinery of enjoyment, but little of the real thing itself; all was pervaded with the stir of *hôtels*, the panting of steamers, and the rattle of carriages. When on my second visit I went higher up, there was, it is true, less bustle; but still what work and preparation there seemed to be for a few hours' enjoyment! What a paraphernalia of guides, provisions, and porters! and what intolerable discomfort for a few hours' excitement!

Very quiet and pleasant, by contrast, were my recollections of vacations spent in England. How delightful were the long days out in Exmoor; the independent start at 6 A.M. with no encumbrances but a modest lunch, a rod, and a basket; the leisurely rambles up-stream till the last trout was extracted from the ultimate peat drain at the source, far up in the heart of the moor; and then, most enjoyable of all, the walk homewards (and supperwards) in the quiet and the dark; nothing seen but the dark form of things—dim but majestic spirits of beauty!—nothing heard but the silent sound of many a waterfall, the weird rise and fall of the goatsucker's 'jar,' and now and then the harsh growl of night-loving herons.

Was there really enjoyment in this Swiss climbing? In the getting up at midnight, the pretence of breakfast

(12.30 A.M.) in a stale *salle-à-manger*, and the dreary tramp in the dark behind guides who only too evidently never washed or changed their clothes? And then the horrors of coming home again, tired out and weak-knee'd, down over *miles* of moraine; and, to end it all, the most unhome-like welcome, or rather want of it, at the hands of strange waiters and stranger tourists!

No; I felt convinced that, unless one could get to feel really at home in Switzerland—could get to be familiar with some corner at least, to know its bye-ways and its peasant folk, its aspect in sunshine and in storm—the most enjoyable part of a vacation spent there was likely to be the return to familiar and homelike England.

Fortunately for me, Fate sympathised with me. My first visit had taken me to the Lake of Lucerne, over many mule passes and along many (far *too* many) highroads. It was during my second visit that Fate suddenly suggested Arolla. As I could not expect to get many practical details about Arolla from her (or Her?), I had to go and see for myself.

Well do I remember my first visit. I was an invalid, overworked; and my knowledge of mountains and of glaciers was purely theoretical. I fancied that grass was safe, but rocks dangerous; that a glacier was something of the nature of a pond, and might 'go through' at any moment; so that continual sounding with a stick, in order to ascertain the thickness of the ice, was quite necessary. We got there in steady rain, on an evening in July 1882.

After passing all human habitations, we went to the end of the world, and there saw an unfinished *hôtel*, sadly looking on beyond at Chaos. At least, in the mist, we had dim visions of unlimited stones, rocks, ice, and snow, which, it was clear, must be the odds and ends that were over when Switzerland was made, and had been pitched down here to be out of the way. So it seemed to us that cheerless and damp evening. Inside things were not much better. We passed through a half-finished and most depressing passage, escorted by a very silent youth (he has developed since then), and found three sad visitors eating marmot by the light of a paraffin lamp. They told us that nineteen people had just left, having been poisoned with verdigris or with something equally pleasant.

That night I fell asleep to the sound of driving rain and the ceaseless roar of the glacier stream. Dreary and repellent indeed seemed Arolla as we first saw it.

Very confused were my ideas when I awoke next morning and looked out up the valley. Where was I? Yesterday, surely—or was it a nightmare?—I had come, tired and wet, to a spectre inn, where a few silent and sad forms moved lifelessly about beyond, there seemed mere formlessness, shapeless wastes of barren rock, brooded over by the voice of invisible torrents, that might be, for all I knew, the very Oceanus bounding the world.

To-day I looked out on a world (no Chaos) exquisite in colour, magnificent in form, and even pervaded by such human sights and sounds as just prevent nature from being too sublime to be borne by weak mortals. Above, a sky of deep black-blue; sharply outlined against it the soaring outline of the Pigne, and the still more beautiful, though less lofty Collon; their snows wonderfully pure and unapproachable to my happily unaccustomed eyes. To left and right, dark ranges of fantastic peaks, possessing, in spite of their sharp edges, the solid power of the mountains. At their feet a picturesque wilderness of boulder and stream, not unmixed with fir trees. And closer to the hôtel, to each side, rose woods of firs and far grander pines, where one could dream away a summer's afternoon, as far from winter as if on the Frohn Alp, and yet in sight of all the stimulating beauty of the snow peaks.

And so we stayed at Arolla. And by degrees, as the wonderful air revived me, some inborn hankering after the mountains began to stir within me. I had better say at once that I have nothing to record in the way of big climbs; nothing, in fact, that will command the respect of the climber militant. Only a rambling record of the way in which a humble lover of the mountains began to learn their ways, and to acquire, bit by bit, knowledge that should enable him to know them well later on.

I think my first experience was on turf. We (i.e. three ladies and myself) set off one day, armed with ornamental walking-sticks, to go up Mont Dolin. One lady was given to falling down at intervals; but in spite of this, and of the exceeding steepness of the turf slopes, we got to the top. The view was delightful; the lunch still more so. I had regarded turf as safe 'by nature;' but when we turned to descend it *did* occur to me that, if our friend were to practise her falling accomplishment on this slope, she might go some way and might feel rather odd (if she felt at all) when she stopped. But though we were neither drunkards nor children, some providence watched over us and nothing

happened. On Mont Dolin, small though it is, I learned to respect turf.

Another day we went to the edge of the Pas de Chèvres. I had heard that there was a way down to the glacier, and we had thought of walking down on to it. But when we looked over, it certainly seemed as if the path had disappeared. It was only by degrees that I (new to the mountains) realised that the 'path' was actually down that horrid-looking fifty-feet precipice. The place fascinated me; and, leaving my sister at lunch, I came back to it and pondered over it. First I got down a little way; then took off my boots and got further. At last I got down to the 'long step' (familiar to many who visit the Valais district), and here made a considerable pause. 'To be or not to be?' I felt that the balance was turning the wrong way; so I burnt my ships, by throwing my boots down, and had to follow them—I refer to my boots, not to my ships—as best I could. To me that day was memorable; not only because it was the first introduction to a rock, but because on the glacier I met for the first time a personage who has since then been our companion in many a climb, from the Aiguille de Blaitière to the Strahlhorn.

The glacier seemed 'thick' (as I then said to myself), not likely to give way. So I potted about instead of climbing up my staircase again. Soon I saw approaching from the Pigne direction four figures. It is only the first that I need mention. Broad, very broad, and somewhat flat was that figure; strange was the fashion of its garments. The face was Tartar, or at any rate the features had a beauty that was not of a European cast. Uncouth in figure, mouth not firmly closed, of a type not seen among our own hardy mountaineers or seamen—no wonder that I had no prophetic forecast of the qualities he afterwards shewed in many a climb. To frequenters of Arolla, a name is hardly needed; and, if my picture of Joseph Quinadoz, as he first appeared to me, is somewhat unflattering, I feel that this is counter-balanced by the opinion that I here strongly imply (and have often uttered as strongly) as to his solid qualities as a guide.

He looked rather curiously at the unexpected apparition of the '*pauvre monsieur*,' who was known to be an invalid staying at Arolla for health, down on the glacier alone. And after that he tried to induce me to do the Pigne d'Arolla, but unfortunately that was against doctor's orders.

Such was my first experience of Arolla, and uneventful enough it was as regards climbs. Next year, however, I

came with a friend, and we tried our first expeditions with Joseph Quinadoz. I remember well our round by the Col d'Hérens, Trift Pass, and Col du Grand Cornier; and I wonder much at the confidence of Joseph in taking us down the Trift towards Zinal in a thunderstorm, the ledges all iced up, and we devoid both of experience and of ice-axes. Still more do I wonder how he got us over the Col du Grand Cornier in a dense mist, and with loose snow nearly up to the waist, he having been that route only once before. I have twice been in a most bewildering mist, in fairly difficult country, with friend Joseph, and neither time did his instincts fail him. It was this summer that I really got to know something of Arolla; for my friend left me after five weeks, and I stayed on, practically alone, for two weeks more. I know well now that it was against all principles, but I must confess that I used to go long scrambles alone, many days in mist and gently falling snow—for it was September. Worse still, I must say that the memory of those weird solitary days is very pleasant. There was no business about the thing; no jokes to scare away the subtle spirit of the mountains; none of the practical and romance-destroying phrases, 'Will it go?' 'A very pretty bit of rock-work,' and the like.

I had then a strong belief in *arêtes*; they were so easy to find and to return home by, in a mist. I have still a sneaking fondness for them, from the memory of those early days of solitary climbs in September, though the Matterhorn somewhat destroyed their credit with experts.

One day I set out (in mist and falling snow) to try the Zinereffien rocks, having borrowed an axe, which I did not 'quite understand,' from the *juge*. I hit off the moraine of the Zigironove glacier (I give *one* sample of spelling here), and could not well lose it even in that mist. A temporary thinning of the air shewed me a most attractive *arête* running right up to a summit of the Zinereffien rocks, and I got well on to it before the mist settled again. 'Unaccustomed as I was' to mountains, I had a vague idea that I might easily glide off into space. And so—when I came to the snow—vast and cavernous were the steps, or rather family seats, that I excavated. I took *three hours* cutting up the snow *arête* to the top! And when I got there all was white and still and impenetrable. A quiet, fine snow fell; on two sides the uncertain-looking slopes sank away apparently into (*der, die, or das?*) *Ewigkeit*, and on two other sides [I hope I am not getting into four dimensions]

stretched away arêtes. One led rather downward in the direction of the summits that look down upon the Pas de Chèvres, the other led upward to higher summits in the direction of the Pigne. I tried to get warm by building a small cairn. I don't think this will prove a monument *ære perennius*, but I achieved one result, viz. the removal of one of my three skins from my hands. These were so cold—I had no gloves all that summer—that I did not perceive my loss at the time, only next day they were very shiny and purple, and felt very ill-protected. Then I turned upward and cut caverns again along the arête, rather below the edge, as I discovered, by the simple method of poking the axe through, that 'the snow overhung.' But before I could reach the higher summits nearer the Pigne, a small cross cornice—some freak of the wind—met me and brought me to a halt. And now, on a sudden, there was a faint stir in the air. A tunnel opened in the mist, and far away and below me I saw a vision of valley and stream, the stream flowing vaguely and undecidedly uphill in an entirely Chinese-like manner. It was a strange and sudden revelation that the rest of the world was there; but it did not last long; the veil fell, and cold white silence shut me in again.

I returned to my cairn and began to descend, occupying the family seats one after another. But it was very slow work. Now down to the left were tempting snow slopes stretching (that year) right down into the valley that leads to the Pas de Chèvres. How smooth and nice they looked, and how safe and level was the white expanse dimly seen lower down! I was ignorant of glissading then, and had not learned never to trust a slope seen only from above. In real truth there was no nice snow on the whole slope, and no gentle incline lower down. Scarcely was I launched on the snow than my heels slipped on the concealed ice, and if I had not managed to pull up against a rock I should have had a queer descent; probably the subsequent proceedings would have interested me no more. So the arête had to be done after all.

Another day I remember well, too; then also I was, in very truth, alone with the Spirit of the Mountains. Again in mist, and with snow beginning to fall, I set out with intent to get up the Grandes Dents de Veisevi. Rising from the valley, nearly opposite to Satarma, I reached the higher levels soon, and was once more separated from all human life by the thick white veil. In the mist I approached within

200 yards of some chamois ; the air thinned somewhat, and I came into full view of them. They were, as far as I could make out, nibbling at some very unappetising moss on the rocks, there being no other vegetation near. They saw me at once, and in a few moments were far enough away. I found their traces all the way up to the top of the Grandes Dents ; and I noticed then (as several times since) that they had a wonderful power of avoiding the treacherous holes between the loose boulders, though all was filled up and covered over with new snow. The same is true of other alpine animals also ; and all seem to have a wonderful instinct with respect to snow-bridges. Above Franzenshöhe (near the Stelvio) I once noticed the tracks of some very light animal over the snow ; it had, as shewn by its traces and by my soundings, chosen just the strongest parts of the bridges, though it was evidently light enough to have passed almost anywhere.

But to return to the Grandes Dents. If the Zinereffien rocks were solitary, the arête up from the Col de Zarmine to the Grandes Dents was both solitary and (to an imaginative person) terrible also. I cannot imagine a more striking, nay, almost appalling sight, than the precipice that descends towards Ferpèche, as I saw it that day. Sheer, black, and deadly cold it looked in the freezing mist ; and threatening rather than treacherous looked the ledges, blocked with frozen snow, or touched with hoarfrost and ice. The top was gained at last ; and again, view there was none. Behind me lay my way home. I had not found it too easy in the loose snow, inexperienced as I was ; and I did not feel much pleasure in the prospect of the return. In the front the cliffs fell steep and black into white space. And to the right there led an evil-looking arête up into the shrouded heights where frozen Perroc brooded sullenly. I was wrong in saying that I had not a view ; in imagination, the view was sublime.

Up there I found, strangely enough, a link with the living world. In a bottle was the name of an old master of mine, whom I had not (and still have not) seen since he left Rugby many years ago to be a head-master elsewhere. He and his wife had ascended with two Evolena guides some time before.

If I have not wearied my readers already with these recollections, I certainly should do so were I to ramble on further about other solitary scrambles, or expeditions guideless but not solitary. Once in mist and snow again I found my way up the Zinereffien rocks from the Seilon glacier ; and was

nearly swept out of a couloir by stones sent down by a herd of startled chamois. Very pleasant, too, were expeditions in search of 'routes' up Roussette from the corner of the Glacier des Ignes, along the Casiorte arête from the Pas de Chèvres, up the Vuibez rocks, and many another.

Nor can I forget Vouasson and its matchless view; enjoyed all the more because we had discovered it for ourselves. No ring of giants shuts you in at Arolla and keeps your spirit weak and oppressed till they are conquered. Peaks easy, peaks difficult, are offered freely; you are encouraged by small successes, and stimulated to greater attempts. But wherever you go, nature is lavish in her display. From the pastures of the Praz Gras, from Dolin, from Vouasson, the view is as grand in its way as from the Pigne, from Collon, or from the Dents des Bouquetins. And for him who desires to learn climbing as an art, a craft, what place more suitable than Arolla? From difficulty to difficulty he can advance; and, even if he becomes a climber militant, there are 'pretty bits of work' that will try his strength if without guides, though he may have come to despise ordinary peaks such as the Nadelhorn.

In the above reminiscences of my early days at Arolla I have tried to show in what manner I venture to think the mountains ought to be approached if one is to become a true lover of Switzerland; I would have said 'a true mountaineer,' but that I do not wish to imply any gymnastic skill beyond that possessed by the ordinarily healthy man. For a young fellow, totally inexperienced but self-confident in virtue of football or boating prowess at home, to rush out for a week or two, buy experience and help, and forthwith intrude himself into the inmost sanctuary of the Alps, this is to my mind almost profanity. True knowledge of, and love for, the mountains comes only by patient and almost reverent study, and, though of course *solitary* expeditions are to be avoided, still each guided expedition should surely be only somewhat beyond what could be done without guides, and 'off-days' should be spent in unguided wanders and confirming of experience.

It is curious how Arolla fascinates those who have once learned to know it. One year we started at Zinal, but found ourselves before the end at Arolla. Another year we began at Innsbruck, explored the Stubai, Oetzthal, and Ortler groups; but finally I found myself trudging from Pestarena over the Monte Moro to Visp, and up the long valley from

Sion to end at Arolla. This last summer we began at Chamonix, but it turned out to be only an indirect route from England to Arolla. Very changed was the hôtel—[not the mountains; they have not changed]—from when I first saw it after the migration of the nineteen. I hardly knew it. People seemed to swarm—Swiss, Germans, French, English—the hôtel was crowded; Arolla, contradiction in terms as it seemed, was fashionable.

Though perhaps the first charm of its solitude had thus been destroyed, yet I must confess that there were counterbalancing attractions. The presence of some well-known climbers there led to plans of more ambitious guideless expeditions. I was fortunate enough to come in for one, viz. up the Aiguille de la Za. Deep, very deep was the snow; we took *six hours* struggling to the top of the Col de Bertol. But the short climb at the end was worth it; and the view was, as are all views at Arolla, not to be surpassed.

Another day my friend and I (with guides) ascended Collon from the Upper Arolla glacier, and descended by the usual route on to the snowfields above the Vuibez ice fall. What climb could be more perfect than this characteristic Arolla climb? The glacier was reached in less than half an hour from the hôtel; the ascent was not too hard and not too long, but just exhilarating; the top was exactly the place to spend an hour in unalloyed content, and the descent had just the amount of difficulty that one needed in order to feel that it really was a day's work.

Our adventuresome friends (to whom the Za expedition was due) took the same round without guides next day, and they solemnly assured me that they had never been up a more interesting mountain, not even at Zermatt; they found it quite hard enough.

Then we discovered that there was the Dent des Bouquetins to be visited. This, friend Joseph told us, was rather hard and long, so we set out in fair time. We passed over the Col de Bertol and round to the E. side of the Bouquetins range, and gained the snow (and ice) slopes of the mountain by a short ice climb as nearly perpendicular as we cared for. Nor were our difficulties over when we reached the main arête whence the Upper Arolla glacier can be seen. There was a very awkward corner to be done, and though Joseph managed to wriggle up round it, it proved impracticable on descending, and he had to find another way. Mist had been gathering all the time, and the wind rising. We stayed a minute or two at the top, and then set

off. What a power the wind had up there, and how frightfully numbing the cold was! We had to hold on tight sometimes, and the fine icy snow, driven by blasts into the face, made it at times impossible to see. I remember well dangling on one bit of rock, holding on by the hands, and feeling vaguely about with the feet for 'some green leaf,' or rather some ledge 'to rest upon,' my eyes, of necessity, tight closed. Vain were the oburgations of my friend in the front, who adjured me in language of very fair strength not to 'stop there all day.' It was far, very far, from my wish to do so, but still I did not feel inclined to let myself go blindly into the middle of next week. However, I got down at last, and was (in a frozen kind of way) delighted to see the second guide, behind me, caught by the same blast, and dangling in just the same helpless way.

Very glad were we to get past the awkward corner again by another route. Then sagacious Joseph led us unerringly, in spite of mist, drifting snow, and obliteration of old tracks, safely down to our former steps. The steep bit of ice-cliff was managed, face to the steps; and soon we were out of the power of the wind, trudging homeward in most unromantic rain.

Let no lovers of the Aiguille Verte and of the Dent Blanche scoff at Arolla as a place for strollers and rambles only. They can make themselves uncomfortable enough—may even get into difficulties—if they like, by trying the Collon or the Bouquetins in unfavourable weather.

And so good-bye to Arolla for the present. Of the days there spent, days of refreshment to body and rest to mind, I can only pray that the memory may be kept green.

AN ASCENT OF THE CIMA DELLA MADONNA.

By HENRI BRULLE.

THE summer of 1886 was remarkable for the alternations of very fine and very bad weather. After having had our faces well scorched on the glaciers of the Oberland, and been nearly frozen on the peaks of the Engadine, we—that is, my friend Count Denys de Champeaux and myself—found ourselves on the summit of the Gross Glockner in the most perfect weather imaginable. As one traced out the course of the Drave one seemed to see the end of the Alps; but to the south towered up the Dolomite peaks, white and red, like the

dawn, a vision which excited in us the desire of visiting them. Hence three days later we arrived at San Martino di Cas-trozza. Dolomites are unlike anything else in the Alps, but their hues, their form, the brilliant sunshine, the contrast between the dark green of the forests and the gorgeous colours of the rocks brought back to our minds certain bits of the Pyrenees.

First of all we went up the Pala di San Martino and the Cimon della Pala, the two giants of the Primiero group. Both on the whole are easy to climb, but very interesting, owing to their miniature glaciers and the savage look of their steep walls of rock. It is well to be on one's guard against the rottenness of these rocks. I speak from sad experience, for, wishing to get to the summit of the Cimon before the rest of the party, and so climbing straight up while they made a round, the bit of rock to which I was clinging suddenly gave way and I fell backwards. By a great jerk I regained an upright attitude and fell, standing, on a shelf of rock close to a great hole in which I might very probably have broken my neck. In the case of such a fall on rocks one gives up at once all hope of escaping death, and I have, under such circumstances, turned hot and cold in a very unpleasant way. Do you not think that a fall on ice or snow produces less lasting impressions, and of quite another kind? I remember one day, when five of us were slipping down the couloir of the Col des Ecrins at lightning speed, how we only began to despair after falling 800 or 900 feet and after making several unsuccessful attempts to stop ourselves. We managed at last to thrust two ice axes at the same time into the snow, and on getting up found ourselves bruised but sound, five or six mètres from the edge of a bottomless crevasse.

We wished to end our campaign of 1886 by some really difficult ascent, as we were very well satisfied with our two guides, Barbaria of Cortina and Bettega of San Martino, the latter in particular being as muscular and agile as a chamois. Every climber has at least heard the name of the Sass Maor, that most marvellous of pinnacles which rises at the south end of the Primiero range, and the ascent of which even Herr Emil Zsigmondy—a competent authority indeed—called difficult. But most probably every climber does not know that this peak consists of two pinnacles separated by a deep-cut gap, the highest (2,812 mètres=9,226 feet) and easternmost of which was the only one ascended till 1886.

The western point (2,767 mètres=9,079 feet)—known at San Martino as the Cima della Madonna—had been climbed

for the first time (August 12, 1886), a few days before our arrival, by Herren G. Winkler and A. Zott, without guides. This latter climb was reckoned at San Martino a most wonderful *tour de force*, and we thus found a foeman worthy of our steel.

We started from the hôtel, all four of us, at 3.30 A.M. on the morning of September 4, and passed over meadows and through forests by the light of the excellent, though microscopic, lantern invented by Herr Gräser, of Vienna. At dawn we reached the brushwood slopes, which soon gave way to stones. Our peak rose like a sugar loaf, hiding the other point. After three hours' walking we had worked round the mountain and stood at the entrance of the hollow where the real climb begins. The ascent of the left wall of this hollow is a bit of climbing of the very first order. Were it not that there is a not very steep slope of stones beneath, instead of a precipice, one would not feel much more at ease than when forcing the famous *mauvais pas* on the southern Aiguille d'Arves. The great stone couloir which you have at first to follow on the ascent of one or other point ends in a gap which falls away sheerly on the side towards San Martino. When you have reached this gap you must turn to the right for the highest peak, to the left for the Cima della Madonna, the rocks of the latter peak literally overhanging.

In order to get used to the look of our foe we turned our back on him and climbed first up the higher peak. The rock walls are smooth, the ledges narrow, the projecting knobs very small. Looked at from a certain height, the Cima della Madonna looked like one of those cylindrical pillars which everyone sees in France along the sides of quays and promenades. Far from reassuring us, our inspection would not have left us the slightest hope of success had we not known that the ascent had been made before. Returning to the gap between the two peaks, we prepared ourselves for the final assault by a last attack on our provisions.

Let me here describe the wall we were about to climb.

Try to imagine a huge block, something like a petrified bag of potatoes, upright and tied a little awry. Two narrow shelves cut it into three bits of equal size, of which the two lower are traversed from top to bottom by several vertical cracks. One of these cracks, deeper than the others and bisected by the lower shelf, stretches out towards the next shelf—and that is the only way up!!

We were obliged to keep close to one another from the very beginning of this climb, for dangers began at once.

Bettega took off his shoes and did not put them on again till the climb was over. He swarined up the first gully while we crouched under some overhanging rocks in order to shelter ourselves against the stones which he loosened. We could not see him, but after an interval which seemed to us very long we heard him give the shout that had been agreed on as a signal that he was up, and at the same instant the end of our 100-foot rope (which he had carried upon his back) fell on our heads. Each of us in turn climbed up this way with divers adventures *en route*, having always a terrific precipice beneath his feet. The gully came to an end below the first shelf of rock; so we had to climb along the wall to the left over a boss of slippery rocks, a very delicate operation. I did not see a worse bit either on the Meije or on the southern Aiguille d'Arves or on the Petit Dru. The man who goes first in such a place must be a climber of most exceptional powers.

The second gully was nearly as difficult as the first. At its upper end we gained the second shelf of rock, where a small cairn, built by our predecessors, showed us that we were on the right track. The climb now changes its character. The peak still rises nearly vertically above one's head, and to the left even overhangs; but on the right it is hollowed out and consists of several very steep ridges leading up to the summit, which is still invisible. We took to the first of these ridges, and after overcoming several difficulties, which elsewhere would have seemed to us very serious ones, we found that we had won the day and that the Cima della Madonna was ours.

The summit is an undulating ridge and surrounded on every side by tremendous precipices. In the centre rises the cairn built by Herren Winkler and Zott. The view is rather bewildering. The Cimon della Pala and the Cima della Vezzana rise nobly, while the Pala di San Martino ends in a flattened dome, the vertical and fluted walls of which have a very odd look.

We came down by the same ridge as far as the upper shelf, and then went straight down. The way was barred by an overhanging ledge, 4 mètres above the lower shelf. Bettega held the rope fast while each of the others plunged into space with a hideous abyss below, and then he himself slid down to the edge of the ledge, grasped it with both hands, put his feet on Barbara's shoulders, and leaped down to where we were standing. It was the most daring bit of climbing I have ever seen.

By following the shelf we reached the last gully. I went down first, at the end of the rope, and crouching against the rock wall I made myself ready to receive De Champeaux, who waved his arms in the air for a second without finding anything to hold on to, and ended by landing on my nose, which afforded him a firm support. Then, held by the rope, which was paid out by the two guides, we clambered down to the end of the gully, helping each other on the way. Bettega, whose feet (despite three pairs of thick woollen socks, worn out one after the other) were completely skinned, was the last to come down, and thus we found ourselves, to our huge delight, all together again and in the gap separating the two peaks. The climb up and down had taken $3\frac{1}{2}$ hours.

A storm now broke out, which accompanied us to the base of the great couloir and then passed away. Its only effect was to make the valley of the Cismone appear more green and smiling than ever, while against the sombre pine trees of the Col de Rolle the white houses of San Martino stood out in bold relief. We halted some time to make sketches and to take our fill of our last mountain climb for the season. Notwithstanding these stoppages we regained the inn some time before the dinner hour. A little later, at the instant when the sun was disappearing, all the mountains turned perfectly scarlet, as if they were ablaze. Then the vivid hues faded slowly away, as happens with a glowing bit of iron while cooling, and all became black and dark. In such wise did the Dolomites bid us farewell.

I have no intention of placing the ascent of the Cima della Madonna on the same level with those of the Meije or Petit Dru—those terrible peaks which demand whole days of the hardest climbing. I shall never, for example, forget the descent of the Meije in complete darkness, when with M. Bazillac, on July 26, 1883, I for the first time made the ascent and descent in a single day. Nor shall I forget that of the Petit Dru (August 2, 1885) when M. de Champeaux and I, starting from Chamonix, were out $25\frac{1}{2}$ hours before getting back there. Yet on neither of these peaks is the climb nearly so steep, the rocks nearly so precipitous, the handhold nearly so scanty, the terraces of rock nearly so lofty, and especially *l'impression du vide* nearly so thrilling as on the Cima della Madonna.

To sum up, I would say that the Cima della Madonna struck us as being the perfect type of a break-neck mountain, and the ascent is perhaps the most interesting scramble which a rock climber can find anywhere.

NOTE ON DAUPHINÉ IN 1887.

BY M. CARTEIGHE.

IN these days, when we are advised by many of the leading members of the Alpine Club to eschew the great centres of the Alps with their crowds of tourists and luxurious hôtels and betake ourselves to the Caucasus or the Himalayas, it is not a little remarkable that so few mountaineers have as yet supplemented their knowledge of the Swiss and other mountains by a visit to Dauphiné. A past president of the Alpine Club has been heard to state that he did not know where Dauphiné was or how to get there. Seeing that one can reach the centre of the district, La Bérarde, from Paris in about the same time as Zermatt, it is surprising how few among those who like or are obliged to make direct for a mountaineering centre, and work round it, have tried this pretty hamlet. Leaving Paris by the 9.20 P.M. train, one arrives, *vid* Lyons and Grenoble, at Vizille about noon the following day. A drive of four hours brings one to Bourg d'Oisans, where there is fair hôtel accommodation and it is well to spend the night. Next morning a drive of two hours suffices to reach Plan du Lac by Venosc, where the carriage road ends; thence to La Bérarde through St. Christophe is a walk of $4\frac{1}{2}$ to 5 hours. The new inn at La Bérarde, opened last year under the management of M. A. Tairraz, late of the Montanvers Hôtel, forms excellent headquarters and is most comfortable. Even those members of the Club who affect to play the part of '*Alpinistes réservistes*' would, I think, find it equal, if not superior, to many of the better known mountain inns in the Swiss Alps, with the advantage of being able to make from it expeditions of variable difficulty and varying length. From La Bérarde, which is in the middle of the chain, a series of cols lead, on the N., to La Grave, beautifully situate on the great military road to Briançon; on the E. and S.E. others lead to Ville Vallouise, and on the S. and S.W. to Val Gaudemar, while the number of peaks which can be climbed from this centre is considerable. The Ailefroide, the Ecrins, and the Meije, not to mention others, impress one immensely from all points of view. The last-named seen from the upper part of the Col du Clot des Cavales and elsewhere is to my mind the most strikingly beautiful as well as marvellous piece of rockwork that man ever set eyes on. From La Grave, the Pic Occidental of the Meije, with its glaciers and rock buttresses, forms a picture framed by nature which can scarcely be rivalled. The contrast between the gloriously bright colours of the rock on the south or Vallon des Etançons side, and the dark carboniferous limestone and shale which form the base of the mountain on the side of La Grave, is also very striking and full of interest.

The details of the ascents of the Pic Occidental of the Meije made by French mountaineers and recorded in the '*Annuaire*' of the French Alpine Club are in places rather amusing reading; the difficulties being unconsciously exaggerated in most of the papers. Nevertheless the accounts of the first ascent by M. de Castelnau with the Gaspards as guides, of the second by Mr. Coolidge with the Almers, and of the memorable ascent without guides by Messrs. Pilkington and Gardiner

show that there is plenty of stiff climbing on the mountain. To me this expedition appeared the hardest continuous rock climb and the longest that I know of. The rock is splendidly firm, ever changing in character, and gives one plenty of excitement.

It is not necessary to refer to other expeditions, for, by the publication of the Dauphiné Guide, ample details have been placed at the command of mountaineers. The excellent map which, it is to be hoped, may shortly be issued will be welcome to all who have had any experience of the existing and very untrustworthy French Ordnance map.

The inn at La Grave is now very clean and comfortable and has been enlarged, and there is fair accommodation at the one on the Col du Lautaret. At the Ville Vallouise inn one finds good food and wine, if served somewhat roughly, and a warm welcome. The Club huts are numerous and very well equipped, so that if one takes enough provisions one can readily make several successive expeditions without descending to the valleys for supplies.

ALPINE ART AND APPLIANCES AT THE WINTER EXHIBITION.

IN accordance with an annual custom, which appears to be developing into an established tradition, the collection of pictures and photographs was thrown open to members and their friends during the afternoon of December 14 at Willis's Rooms. The rooms were inconveniently crowded during the greater part of the time and the exhibition partook perhaps a little too much of the character of the modern 'Private View,' that term signifying nowadays a view of a considerable section of the fashionable public and of little else. On future occasions it would certainly seem desirable to limit more strictly the number gaining admittance by a single member's card—say, to two or three—and not to issue, as is practically done at present, an unlimited number of tickets each giving admittance to an unlimited number of friends. When the idea was first started some eight or nine years ago there were no such objections. A public had, as the theatrical managers say, 'to be created.' Now, however, the public has not only been created, but is beginning to multiply at an alarming rate. Perhaps, however, these sentiments were not shared by the mass of the visitors, and were confined to the individual charged with critically reviewing the works exhibited: a struggling writer was the right man for that task.

On the whole the exhibition was equal to the average in point of excellence and interest as regards the paintings and sketches, while the photographs were distinctly superior to any yet shown at the winter dinner. One artist, indeed, who for many years has been a mainstay of the exhibition—Mr. Arthur Croft—sent no new works, owing to absence from England. However the number of contributors was larger than usual and the gap was well filled. *Place aux dames.* One of the first water-colour drawings to attract attention was a beau-

tifully delicate little study by Miss Edith Paine of the Viescherhörner. Though small in scale, the solidity of the mountains was admirably rendered, while there was atmosphere enough to satisfy the most exacting. Somewhat less successful was a drawing of an oft-repeated but most difficult subject, the valley of Grindelwald and the Wetterhorn as seen from the lesser Scheidegg. Pleasant too, and bearing evidence of most careful work, were some studies by Miss Donkin, notably a view of the Weisshorn from the Bel Alp and a most conscientious drawing of the lower part of the Aletsch Glacier. Mr. Alfred Williams, of Salisbury, sent some drawings which had illustrated Mr. Charles Pilkington's paper on the Black Coolins. In these the artist was seen at his best; indeed, we do not remember to have seen such powerful work before from Mr. Williams. The colour, though sombre, was rich and harmonious, while the rocks were drawn and modelled by one who had studied their anatomy. It is related that Gustave Doré was fond of sketching in the Isle of Skye, and used largely the material so collected in his illustrations to the Old Testament. But Doré saw everything through the distorting mirror of a too vivid imagination, and often became grotesque when he sought to be impressive. Mr. Williams shows that the weird scenery loses nothing by being accurately rendered. Moreover the subjects lay well within the artist's power, a condition of success too often ignored by our Alpine painters. M. Gabriel Loppé was well represented by the pictures recently on view at the Liverpool Exhibition. These works were referred to in the last number of the 'Alpine Journal,' and need not be further discussed, especially as they were seen under less favourable conditions. Two charming studies by the same artist were lent by Mr. C. E. Mathews; one of the Märjelen See, the other of the slopes of the Montanvers covered with Alpine 'roses' at a time of year when the mountains are too little visited. M. Loppé stands alone in his power of rendering the wonders of the world of ice and névé. We should not forget that he has taught also that the Alps are beautiful at all seasons of the year. Mr. H. G. Willink's spirited sketches were, as usual, marked by good drawing of figures, originality, and humour. The title of a picture does not make or mar its success so often as does that of a book or play, but it contributes a little, and Mr. Willink takes full advantage of the fact. As an example: 'On the "Alsirat" Glacier,' representing a party cutting their way down a knife-edged ice slope, was most happily named. A black and white drawing of a guide 'putting his foot in it' on a cornice was remarkably vigorous and dramatic. The next misguided person who attempts a book on mountaineering will be fortunate indeed if he secures Mr. Willink's help as illustrator. Two beautiful drawings by Mr. Alfred Parsons were the gems of the whole exhibition, and it is well that the receiving committee construe liberally the phrase 'paintings of Alpine interest' when the result is to admit work so artistic. Of rock and glacier, of Matterhorns and Aiguilles du Dru we have more than enough; of Alpine byeways, of the nooks and recesses of sub-Alpine tracks, with their thousand and one beauties, we have too little; and yet the subjects to be found here are as characteristic as those of the world above the snow line. Signor Joseph Micocci exhibited three

pictures, all bearing evidence of marked improvement on previous work. A view of 'Les Jumeaux de Valtournanche,' looking up the valley, was the most successful. The autumn tints were pleasantly and truthfully given, and the mountains took their place well in the picture. The water of the torrent in the foreground left something to be desired, but the composition of the painting—an important feature as a rule wholly neglected—was natural. A view of the Mischabelhörner from the Staffel Alp was also noteworthy for the drawing of the mountains; the foreground was stiff and hard, though evidently the result of most careful work. Signor Micocci is pursuing the right road to success, and we look forward to still further improvement. We were glad to see some works by Mr. George Barnard showing that his eye for colour and grandeur is not dimmed, though some of the natural force of execution is abated.

Mr. Garrett Smith was represented by the picture—lent by Mr. Horace Walker—which was such a prominent feature of the Alpine collection in the Liverpool Exhibition. The work requires a strong light and justice could not be done to it. An interesting and very imaginative study, by the late Elijah Walton, of the Matterhorn showed at once the strong and weak points of an artist who strove hard to render the impressions made on a sensitive mind by the Alps. The drawing of the mountain was marvellously correct, and the majesty of the grand towering peak was conveyed with surprising success; but the foreground was absurd, the strangest liberties were taken with the light, while the sky, to borrow a description of Mr. Ruskin's, was 'morbid and impossible.'

One or two pictures by Mr. Croft which have been previously seen at these exhibitions and some studies by the Chevalier Prina attracted attention. Nor must we omit to mention a very careful study of crevasses by Mr. Coleman, one of the pioneers of Alpine painting, and a number of beautiful black and white drawings contributed by Mr. Compton.

The photographs may be pronounced at once the most remarkable yet exhibited of the Alps. Some of Signor Sella's seemed to realise the acme of delicacy, one especially, a study of clouds at sunrise, being a marvel of the photographic art. A series of views—pictures, we would rather say—from the top of the Weisshorn were also very successful and striking. Equally fine were Mr. Donkin's views 'Among the Chamonix Aiguilles.' It is remarkable to observe how these two leaders of Alpine photography supplement each other's work. Signor Sella, employing silver prints on albumin paper (measuring about 15" x 12"), gives us the results of an 'impressionist.' Fleeting effects of cloud, the play of shadows and the chequered light on ice- and snow-slopes, he seizes just at the right moment. Signor Sella appears to us a master in the art of judging the amount of blue light present in the atmosphere and the consequent photographic tone of a given snow view. Mr. Donkin (employing silver prints on gelatine paper of smaller size) sees, on the other hand, the majesty and solidity of the mountains themselves, and the fine modelling he secures is the result of the most careful attention to the direction of the light and the resulting shadows. A remarkable plate by Mr. Donkin illustrates at

once the points we have mentioned. It represents the mass of the Dôme and the Aiguille du Goûter seen from the Aiguille de Grépon. Over the Aiguille du Goûter the sky is blue, and the snow is consequently in high light in the photograph. A thin mist overhangs the Dôme, becoming more dense towards the summit of the mountain, and the result is a series of marvellous gradations of tone. Such plates undoubtedly lose by enlargement, and the autotype enlargements are best suited to rock pictures. It is interesting to compare the autotype plates with some excellent 'bromide' enlargements exhibited by Mr. Wallroth. These are indistinguishable from 'platinotypes.' This process seems to soften down shadows that are too strong, and consequently to give good definition to foregrounds of distant views in some pictures; but the gain in this direction is perhaps counterbalanced by a certain resulting flatness and monotony in the print.

A novel feature was introduced into the Exhibition, and, through the kindness of many members of the Club, a very interesting collection of Alpine appliances was got together. No exhibits were accepted unless contributed by members, or a very much larger show could have been formed. It is to be regretted that the original idea of transferring the exhibits to the Club Rooms for a week or two could not be carried out, since little time was afforded for testing the merits of the various contrivances and modifications of appliances shown. The collection was comprehensive enough, for it included all manner of articles, from a wooden chair carved at Grindelwald to an Arctic dress. Ice-axes naturally abounded, and patterns were shown made nearly thirty years ago. Mr. Tuckett's 'Ancient British Ice-axe' reared its paternal head proudly, looking down on its more stunted successors. In the process of evolution of the modern weapon, with its nicety of balance and beauty of curve, this old axe probably occupied a place similar to that accorded to the lowest vertebrate animal by the 'true believer'—in evolution. It marked a distinct epoch. Very interesting were Mr. Whymper's exhibits, and very practical his mountain gaiters and caps. Sleeping-bags innumerable were to be found in all parts of the rooms. An ingenious bag, devised by Mr. Howse, consisted of a mackintosh sack, one longitudinal half being capable of inflation. Thus the camper out might lie in luxury on an air mattress. Dr. Frederick Taylor, who exhibited the bag, had used it during many seasons and found that it was practical and easily carried. The majority of the bags shown were reproductions of Mr. Tuckett's original design. Numerous patterns of rucksacks were to be seen, and it is evident that this substitute for the knapsack is fast growing into favour. Some of the rucksacks shown had been severely tested as to their waterproof qualities in the Caucasus and elsewhere, and proved far superior to any knapsack yet devised. Mr. Coleman contributed many articles of interest, among them a drawing of the 'Hudson' sledge, which readers of 'Peaks, Passes, and Glaciers' will remember proved of such signal service in the memorable Col de Miage expedition. The sledge itself was not discoverable, but Mr. Coleman's careful drawing illustrated the

nature of the contrivance admirably. Its interest was, however, chiefly historical. Possibly, in the future, grand-motherly Alpine legislation will direct that articles of this sort shall be kept at the huts, together with an automatic pill-delivering machine in case the worn mountaineer needs medicinal aid. The experiment of forming a temporary collection of appliances was so successful that it seems well worth repeating on some future occasion, when we hope better opportunities for examining the exhibits will be available. Among the contributors were the following:—Messrs. E. Whymper, F. F. Tuckett, C. E. Mathews, W. F. Donkin, J. A. Hutchinson, R. Spence Watson, H. Fox, C. Pilkington, L. Pilkington, J. H. Wainwright, E. T. Coleman, F. O. Schuster, G. P. Baker, C. T. Dent, Julius Meurer, F. Taylor, G. H. Savage, Horace Walker, D. W. Freshfield, Mrs. Jackson, R. M. Beachcroft and Mrs. Beachcroft, Rev. H. B. George.

The rooms were well lighted by a temporary installation of electric light, successfully carried out by Messrs. Woodhouse and Rawson, who gave satisfaction by reason of the quickness of their work and the complete attention to all details. Considering the crowd, no other method of lighting the pictures was possible. The band of the Grenadier Guards was in attendance during the afternoon.

IN MEMORIAM.—F. J. CHURCH.

It will not be a surprise, though a sorrow, to many of the members of the Club to hear that F. J. Church (the only son of the Dean of S. Paul's) died of lung disease at Hyères on January 16 at the early age of thirty-three. He had been failing in health for some months. He will be missed from our meetings, but still more from Zermatt, his favourite summer resort. Though not distinguished as a pioneer, he was well known as a critical observer of other men's work; and though at times sarcastic in expression, he was a man of great kindness of heart and fond of culture. He was a reviewer, and a writer who had great power; he hated shams, and was free in his condemnation of what he considered to be such. Though at first rather feared than loved by the majority of the guides, he became a hero to them after his self-sacrificing efforts for the families of those who had suffered in Alpine accidents. Old Franz Andermatten was his favourite guide, and Church was Andermatten's favourite 'Herr.' Of late years he made far more plans for expeditions than his strength would allow him to carry out; his ideas were larger than his power to perform. His tall, thin figure will be missed, and his stimulating sarcasm will be often remembered at the Monte Rosa Hôtel.

G. H. S.

ALPINE NOTES.

THE LATE A. W. MOORE.—We are requested to announce that, by the permission of the Head Master, a tablet has been placed in the chapel at Harrow in memory of Mr. A. W. Moore by a few of his friends and colleagues in the Alpine Club and India Office.

WINTER EXPEDITIONS IN THE ALPS.—The fine and settled weather which prevailed in January, and the comparatively small quantity of snow, are no doubt the reasons of the numerous and important winter ascents made this year in the Alps.

First come Mrs. Jackson's most remarkable and daring exploits in the Oberland, of which she has most courteously communicated the following particulars to us:—

'January 5, Mrs. E. P. Jackson and Mr. Emil Boss, with the guides Ulrich Almer and Johann Kaufmann, made the first ascent in winter of the Gross Lauteraarhorn.

'Leaving the Schwarzegg hut at 4 A.M., they crossed the Strahlegg Pass and made direct for some rocks running south from the peak; these were followed (narrowing into a small couloir) until a snow col at the foot of the final arête was reached. The rocks of this arête were in perfect condition, quite free from ice or snow, and warm as in summer. The descent from the foot of the arête to the Strahlegg Glacier was made in one hour by a long snow couloir.

'January 6, the same party, leaving the Schwarzegg hut, crossed the glacier to the foot of the Klein Viescherhorn,* and ascending easy slopes of snow, reached the east arête, by which the summit was gained in two and a half hours from the hut. The descent was made on to the Grindelwald Viescher Firn, and Grindelwald reached in the evening.

'January 11, the same party, with Ulrich Almer and Christian Jössi as guides, left the Bergli hut at 7 A.M., and crossing the lower Mönch Joch and part of the Ewig Schnee Feld, ascended by long snow slopes to the foot of the S.S.W. arête of the Gross Viescherhorn. This was followed without difficulty to the summit, the rocks in parts being covered with snow. Descent in thirty-two minutes direct from the top by a long slope of snow.

'January 16, the same party, with Ulrich Almer and Peter Baumann as guides, left the Bergli hut at 5 A.M., and ascending the Jungfrau by the ordinary route, crossed it to the Wengern Alp. Some step-cutting was required shortly after leaving the summit; the rocks of the Schneeschnepf were difficult to ascend on account of the deep snow upon them, and a large portion of the upper ice-fall of the Guggi Glacier having broken away, a very long time was lost in trying to force a way through it.

'The snow everywhere was in perfect condition, the upper rocks free from snow, the only trouble from ice being on the Jungfrau.'

Such a series of great ascents in winter has hitherto been accomplished by no English climber, and will long remain unsurpassed.

We beg leave to offer Mrs. Jackson our most hearty congratulations on her brilliant successes.

On January 5, Mr. P. J. de Carteret made the second winter ascent of the Schreckhorn. The following details of the climb have been kindly communicated by him and will be read with great interest:—

* [Mr. Emil Boss informed me the day after the party returned to Grindelwald that the peak reached by them was a point on the N. ridge of the Ochsenhorn, which bears many names, and is possibly identical with, certainly not distant from, either the Grindelwald Grünhörli (3,121 mètres) of the Siegfried map or the point marked 3,360 mètres.—W. A. B. COOLIDGE.]

'I started from Grindelwald on Wednesday, 4th of January, with Christian Roth and Christian Bohren, at 11 A.M., for the Schwarzegg hut, reaching it at 6 P.M., after a stiffish struggle with the snow.

'We were two parties in the hut, and having enough fuel, did not suffer from the cold, and, thanks to Mr. Emil Boss's good management, we breakfasted luxuriously on hot soup and steaks.

'We were off by 4 A.M., found the snow in fair condition though somewhat powdery. We arrived at the Sattel at 12, left it at 12.30. From the Sattel to the point where you strike the ridge there was ice, which entailed some step-cutting; the arête itself was in good order, the rocks being free from ice, and we did not encounter any serious difficulties. We reached the top at 2 P.M. The view was superb. We were back in the hut at 6.30 P.M. We saw Mrs. Jackson's party on the summit of the Lauteraarhorn.

'I believe a good deal of climbing might be done in the winter, provided one only starts in settled weather; there is but little danger of avalanches till the end of February, and the rocks on the higher mountains are generally in good order. The views are finer than in summer, the air being so much clearer.'

On January 5 the four Signori Sella, headed by the indefatigable Signor Vittorio Sella, and led by the three Maquignaz and Emile Rey, succeeded in *crossing* Mont Blanc from the Aiguille Grise hut to the Grands Mulets. On the summit the tent in which M. Vallot spent three days last August was found in perfect condition. The Signori Sella have now made by far the greatest number of high winter climbs as yet recorded.

Travellers, as distinct from climbers and invalids, are beginning to find out that the Alps in winter have a charm of their own. A striking proof of this was the pleasant English party (varying from eight to twenty) which early in January gathered together under the hospitable roof of the Bear Hôtel, at Grindelwald. The fascinating pursuit of 'tobogganing' was varied by many excursions up the neighbouring hills, in which tracks, deep and plain, were to be found. The Faulhorn, both Scheideggs, the Eismeer, Waldspitz, were frequently visited, even by ladies, and some very excellent photographs procured. An amusing feature of these walks was the fact that some of the numerous Bear dogs were generally of the party, whether a great St. Bernard like Sultan, a 'dachshund' like Spatz, a fox-terrier like Vickey, or a spaniel like Hunter.

The Messrs. Boss outdid themselves in providing for their numerous guests, who were not, as a Paris paper reported, 'half-starved,' but rather the reverse.

ALPINE ACCIDENTS IN 1887.—The Editor has received the following letter:—

SIR,—I have read with pain the long list of Alpine accidents reported in your number for November. I need not say that I agree with your general moral; it is no doubt desirable to preach caution. But I confess that I do not quite agree—nor do I think this moral quite consistent—with your opening statement. We might imagine, you say,

that one main cause of these mishaps was the neglect to take guides; but you consider that the narratives of the accidents show the 'baselessness' of this view. In answer to this, let me take some of the facts which you proceed to give:—

1. Six young Swiss were killed on the Jungfrau, by a fall upon a snowslope over a bergschrund. One of the party was almost a guide, others were good gymnasts. Now I observe that one guide (or quasi-guide) to five travellers is very short allowance. The party lost their way, which they would have been less likely to do with good guides. Had three of the party been good guides, would they not have had a better chance of stopping the fall? I once had a fall nearly on the same ground, though I had only one fellow-traveller and two guides (Melchior Anderegg and Christian Lauener). As it happened, they could not stop us till we got to the bottom; but they alone gave us a chance of stopping. I need not explain to readers of the 'Alpine Journal' why a party with a due proportion of experienced guides would have a better chance than one of which five-sixths were not guides, though they may have been good athletes. You attribute the accident to the badness of the rope. Surely, as in the well-known accident on the Matterhorn, the weakness of the rope was the sole chance of escape. It was, it seems, strong enough to pull the whole party down. If it had not broken at all, would it not have done the same thing? Had some remained standing, the weakness of the rope would explain the loss of the others, or the safety of those who escaped. As it was, I do not see how it can be called a 'cause' of the accident. The badness of the weather, again, might have endangered a stronger party; but the weakness in guides certainly made the bad weather more dangerous.

2. Mr. Wheeler's death was clearly due to his carelessness in crossing a snow-covered crevasse, which no tolerably prudent guide would have allowed. (May I say in passing that Mr. Sully was in bad health, utterly inexperienced, and from all that I have heard, would in all probability have lost his own life, without saving Mr. Wheeler's, had he acted differently?)

3. The accident to Messrs. Lammer and Lorria on the Matterhorn was happily not fatal, but was surely just one of those which would be less likely with good guides. An avalanche in a couloir may come without warning; but it is precisely one of the dangers which an experienced guide foresees and avoids.

4. The loss of Mr. Schreyer on the Steinernes Meer is, again, as I think, a case in point. A couple of travellers wander for two days in the snow till one dies of exposure. Would such a catastrophe be likely to happen with decent guides?

Here are four accidents, and I might add one or two of the others mentioned, which would have been far less likely if guides had been taken. You apparently exclude my No. 3 because it was not fatal, and No. 4 because it happened 'below the snow line.' Yet it was on snow, and in course of climbing a mountain nearly 10,000 feet high. If you will forgive me for saying so, I do not quite understand the logic of this mode of classification. Whether the accident happened above or below the snow line, it is equally true that it would not have hap-

pened if a good guide had been employed. The truth is, I take it, that in most expeditions below the snow-line—though some such expeditions are quite as dangerous as any—it is not generally thought necessary to take guides. Therefore we cannot condemn people for not taking them. But we must still note the fact that they would on some occasions have been useful, and that the catastrophe must in that sense be ascribed to their absence. In some cases mentioned, *e.g.* the fall on the Sanetsch Pass, it would of course be absurd to say that there should have been a guide. But I do not see that this is true in the Steinernes Meer case. There it seems to me the travellers ought to have had a guide, though their point was only 9,640 feet high. In short, the true criterion is not the height but the nature of the expedition, which may or may not render the presence of a guide a natural precaution whatever its height.

And this brings me to my point. I do not object to expeditions without guides. On the contrary, it has always been my opinion that a man should, if possible, qualify himself to climb without guides. To take a guide is an obvious precaution, necessary for some people even in the simplest expeditions, unnecessary for others even in the most difficult. Every vigorous young man should try to place himself in the class which can dispense with guides. That is the way to restore the charm of novelty to peaks already climbed. But then, a man ought to qualify himself carefully, and to abstain till he is justified in his confidence. Till he has done so, I think (and I think that the cases in question prove) that he will act very rashly if he tries a dangerous expedition. Agreeing with you that it is necessary to preach caution, I think that this is one of the first and most obvious precautions to be taken. In this, as in most cases, it is utterly impossible to lay down any hard and fast line. What would be dangerous for me would be safe for Anderegg or for our best English climbers. What is safe for me to-day would be dangerous for even Anderegg to-morrow. And in this matter, I hold that the Alpine Club should do everything in its power to set a high standard, to condemn all rashness, and to point out that it is as dangerous to dispense with a guide as to dispense with a rope in crossing hidden crevasses, until you have skill and experience enough to be capable of acting as a guide to yourself.

Yours, &c.,

LESLIE STEPHEN.

[We gladly print Mr. Stephen's letter and fully acknowledge the right of criticism to which his great Alpine experience entitles him. We are, however, unable to agree entirely with him, for the following reasons :

(1) In the case of the Jungfrau accident, Mr. Stephen does not even mention the fact that the party had successfully found the right way (as the Lauterbrunnen guides, who were likely to be prejudiced against them, allow) up from the Roththal, a way which is much harder than the usual way from the Aletsch glacier. They had thus showed that they were distinctly good men. On their way down the easy side of the mountain they lost their way in a tremendous storm, as any ordinary guide would probably have done. A first-class guide *might* possibly

have extricated them from their perilous position, but we fear that the great majority of guides who lead travellers up the Jungfrau from the Aletsch side can scarcely be called first-class. Besides, this is only a possibility, and it is certain that their rope was bad and broke in many places. The accident seems to us to have been due far more to the great storm than to any want of skill on the part of the six climbers; with fine weather they would pretty certainly have come down safely.

(2) Mr. Wheeler, in the course of a stroll, went a short way on a well-known glacier, having his ice-axe with him. He can scarcely be blamed for not taking a guide any more than ordinary tourists who venture a few steps, say on the Ober Aletsch glacier.

(3) Herren Lanmer and Lorria have very great Alpine experience, and at the moment the avalanche fell were, we believe, descending in the steps they had made in the morning, having been turned back by iced rocks high up on the peak. Assuming that the best of guides would have attempted to repeat Mr. Penhall's expedition at any time, we fail to see what he could have done beyond what these gentlemen actually did. He could not have altered the state of the rocks or averted the avalanche, and it is scarcely wise to strike out late in the afternoon any variation on the route taken on the ascent.

(4) Herr Schreyer had completed the ascent of the Hochkönig, and had reached on the descent the high valley at its foot. It appears, further, from the authorised account ('Mittheilungen des D. und Ö. Alpenvereins,' 1887, No. 17, p. 212), that he and his friend had previously made the ascent (which is an easy one, according to Büdeker), and that the accident took place *not* on permanently-lying snow, but on snow which had fallen to a depth of 2 mètres in consequence of the terrific storm which raged over the Alps from August 16 to 21.

We freely admit 'that the true criterion is not the height but the nature of the expedition;' yet, in the matter of taking or not taking guides, a broad distinction has always been drawn between expeditions above and below the snow line. Until of late years the 'Alpine Journal' took no notice, save in special cases, of accidents occurring below the snow line. Three of the four expeditions which Mr. Stephen mentions cannot be described as, in themselves, dangerous; in the case of the fourth, the climbers were men of great experience. In each case we hold that it was not rash or foolish to undertake them without guides. Mr. Stephen, mindful of the giants of old days, does not realise that a really first-class guide is now very rarely to be met with, and the few there are would scarcely have been taken by any of the parties whose neglect he so severely blames. If first-class men are required on every ascent which may conceivably become dangerous, the number of ascents made will be very seriously curtailed. Many mountains are now so well known that the risks attending their ascent are reduced nearly to their minimum.

We cordially thank Mr. Stephen for his remarks, the principle underlying which is most excellent, though we cannot agree with him in his application of it to the four cases he has selected.

EDITOR.]

THE ACCIDENT ON THE BONDASCA GLACIER.—The Postscript which appeared in the last number of the 'Journal' about Miss Barker's death in the Val Bondasca last October gave a somewhat incorrect account of the exact details.

Miss Alice Rosa Barker, with a guide from Bondo (Andrea Piccenoni the elder), left Promontogno at 7.30 A.M. on October 13, 1887, to cross over the ridge which separates the Val Bondasca from the Val d'Albigna by the Sciora (Cacciabella) pass. The expedition is a very usual one, and in the summer months eight or nine hours are sufficient to allow from Promontogno to Vico Soprano by this pass. Their walk so far as the 'Forte di Sciora' was uneventful, but on making a short halt for breakfast Miss Barker, who partook of very little in the way of refreshment, got chilled—'perchè vi era della neve,' to use the guide's expression in his written official statement made immediately after the accident to the 'Attuario di Circolo' of the district. The guide states that at this point, and under the existing circumstances of cold, he advised a return to the hôtel by the same way as they had mounted. Miss Barker, however, was unwilling to be beaten, and they pushed onwards, reaching the summit of the pass at 2 P.M. Here, after a moment's halt, the lady fell down on the snow, fatigued and overcome with cold. A retreat was again recommended by the guide, who remarked that they could visit the Val d'Albigna another day from Vico Soprano if she wished to see it. To this proposal Miss Barker consented, with the words 'Domani anderemo da Vico Soprano.' On their way down to the 'Forte' she received much assistance from the guide. Arrived at last at their halting place of the morning she drank a little wine, but was at that time convulsed altogether by the cold. At last the guide said, 'Andiamo andiamo, stie in piedi'; but she could go no further, and she died where she was, with the words, 'Che dite, che dite?' on her lips. The guide then placed the body under a sheltering rock and went down to Promontogno immediately for assistance. The body was brought down next day (Friday, October 14) to Promontogno. Miss Florence Barker, who was at the Hôtel Bregaglia with her maid, was already in delicate health, and the shock was altogether too much for her. She was so overcome with grief at her aunt's death that she pined away and died on Sunday, October 16, in the house.—F. T. WETHERED.

THE NEW REGULATIONS AS TO GUIDES IN THE VALAIS.—In our last number (p. 422) a brief mention was made of the new regulations relating to guides published in the Valais in the early part of the summer of 1887, and of the criticisms passed on them in the 'Echo des Alpes,' the official organ of the French-speaking sections of the Swiss Alpine Club. We now give further particulars. Here is the text of the two most objectionable paragraphs:—

'Art. 11.—Il est défendu aux guides de montagne d'accompagner des touristes pour les ascensions de premier ordre, ainsi pour le passage des cols réputés dangereux, à moins d'être à deux pour un voyageur seul, et s'il y en a plusieurs, dans la proportion de trois guides, au moins, pour deux voyageurs.

'Art. 12.—Les cabanes construites par des Sociétés ou des particuliers

pour faciliter les ascensions sont placées sous la sauvegarde des guides de montagne, qui doivent veiller à ce qu'il ne leur arrive aucun dommage. Chaque fois qu'ils auront occupé une de ces cabanes, ils feront constater dans leur livret sous la signature du touriste qu'ils accompagnent, l'état dans lequel ils ont trouvé la cabane à leur arrivée, et l'état dans lequel ils l'ont laissé au moment de leur départ.

'Le guide qui sera déclaré en contravention aux articles précités sera puni d'une amende de 5 à 50 francs, ou du retrait limité ou définitif du diplôme.'

We are very glad to learn, and take great pleasure in announcing, that, on the suggestion of the Geneva section, the 'Sections Romandes' of the S.A.C. have decided to issue a joint protest against these extraordinary regulations. Monsieur A. Tschumi, to whom the idea of such a protest is due, has written a scathing criticism of the new rules in No. 3 of the 'Echo des Alpes' for 1887. After premising that Article 11 sanctions what may be called the 'système sandwich,' the guides supporting and holding together the ham—that is, the traveller—he points out that this rule is harmful both to travellers and to guides. It is harmful to travellers, for its terms will lead more travellers than ever to make ascents without guides, and thus increase the chances of accidents happening to men who do not possess the requisite qualifications for going alone on high ascents. It is harmful to guides, not only because fewer will be employed than formerly, owing to the increase in the number of ascents without guides, but because it practically puts an end to the useful and hardy race of porters in favour of 'guides patentés.' M. Tschumi slyly remarks that as the Valais Government is so anxious to protect the lives of travellers, it might have done so far better by raising the standard of the examination required to be passed by would-be guides than by its wonderful new rules. This clause, too, will tempt the inferior guides to inform against their more skilled comrades, who much prefer a good porter without a 'livret' to a poor guide with one. Again, on difficult places every increase in the number of the party retards progress, and therefore makes it more likely that the party will be overtaken by darkness before having got off the hard part of the mountain. Finally, M. Tschumi asks, How are we to find out which ascents are ascents of the first order and which passes are dangerous? for, as every climber knows, a heavy fall of snow or a sudden storm may turn an easy ascent into a most dangerous one. He therefore calls on all mountaineers to help him in protesting against these rules, in hopes of getting them rescinded before the season of 1888 commences. We can but approve of this protest, and we hope English mountaineers will associate themselves with the opposition of their Swiss colleagues to these vexatious and useless regulations.

M. de Torrenté, the president of the Monte Rosa or Valais section of the S. A. C., also writes to the 'Echo,' explaining that his section, while ready to welcome help given by the Government, entirely refuses to accept the new code of rules. He suggests, ironically, that the Government should *every year* issue a list of the expeditions included under Article 11, and hints that travellers ought to be classed, as well as the

peaks and passes they want to do. He insists, too, on the great danger of introducing a system of spies among the guides themselves.

On Article 12 both writers are equally severe. M. Tschumi draws a ludicrous picture of the absurd inconveniences of forcing every party spending a night in a clubhut to record, in the early morning, their impression not only in the 'livre des voyageurs,' but in the 'livrets' of their two or more guides. The writer of this summary spent a night last August in one of the Valais clubhuts, in company with twenty-one other souls, making up seven parties in all, and shudders to think of the scene which must have taken place if any attempt to carry out this *règlement* had been made. This, however, was fortunately suggested by no one, though certainly the state of the hut was most filthy and deplorable—a disgrace to the Valais guides.

We have preferred to summarise the views of Swiss climbers rather than attempt to express what we believe to be the opinions of English mountaineers on this subject. It is all the more needless to take the latter course, for we are convinced that the members of the Alpine Club will emphatically endorse the unanimous condemnation passed on these unlucky rules by all experienced climbers, whether amateurs or guides. The Valais Government no doubt honestly wished to put some check on the increasing number of Alpine accidents, but it has taken the very worst way of carrying out a very praiseworthy wish. We can only urge them to try again, and wish them better luck next time.

TRAMPS IN THE WESTERN HIGHLANDS.—Alpine Clubmen who may be tempted by the promise of hard scrambling in the Coolins held out by Mr. Pilkington, and who are something of tramps as well as gymnasts, may be glad of the suggestion of a route, or several routes, by which Skye may be approached through some of the most beautiful and unfrequented parts of the Highlands. Four years ago I made my way north from Arisaig to Loch Maree and Gairloch, among lochs, glens, and heights, where I came across tourists and their tracks only at rare intervals, and lodged at inns, homely indeed, but in which I was treated as a guest, and not as one of a gang, and was allowed to start when I liked and to eat as I wished.

Lochs Nevis and Hourn are visited by yachtsmen, and Mr. Black, the novelist, has used them freely as backgrounds. But to the pedestrian and his guide-books they are almost unknown.

Baddeley's 'Highlands'—I need not limit the remark to one of an admirable series—is an excellent work. Its publisher deserves the best thanks of geographers as well as of pedestrians for the excellent contour maps he supplies. He was the first man to produce district pocket guides in this country which compare favourably with those published abroad. But on this wild coast even Baddeley is at fault, partly, perhaps, because the Ordnance maps have only lately been issued. 'It is difficult,' he writes, 'for the most enduring pedestrian to plan a route by which he can bring the scenery at the head of Loch Hourn within the compass of a day's journey.' I did not find this sentence quite justified, but I am grateful for it. The challenge implied was just the incitement I needed, and it led me through some noble scenery.

My route was as follows: Arisaig, Loch Morar, Tarbet Inn, Loch Nevis, boat to Inverie, pass to Loch Hourn, ferry, Glenelg, Shiel House Inn. Thence tourist ground is traversed to Strome Ferry. A track leads from the northern shore opposite the inn over the moors of Applecross to Shieldag on Loch Torridon, and along the south shore of that wild loch to the little hamlet and rough inn at its head. There are roads to Kinlochewe and Gairloch, and any supporter of Mr. Bryce's 'Free Access to Mountains Bill' prepared to violate a 'sanctuary' might go directly over very high and rugged hills to Loch Maree.

Should I revisit this district I would go up Loch Arkaig, ascend the fine summit Sgòr na Ciche (3,410 feet) behind Sourlies at the head of Loch Nevis, and so to Loch Hourn Head and Shiel House.

I will note briefly the views on the road which remain in my memory. First I recall the noble outlines of Rum and Figg, seen from the heathery shore near Arisaig. Next the outlet of Loch Morar. The strong bright stream from the lake runs only a few hundred yards, and then tumbles in a pretty cascade between red-berried ash-branches into a land-locked tidal bay or creek, where boats ride among banks of brown seaweed, and the splash of the waves mingles with the sound of the waterfall. This landscape, in its fantastic combination of natural incidents seldom found united, might, were not the incidents all so homely, suggest a drop scene. Loch Morar is spacious and melancholy, and the wretchedness of the few farms scattered along its shore deepens the impression of the scenery. Loch Nevis in the gloaming seemed to me stately, and the mountain forms at its head are surely among the most striking in Scotland. The inn at Inverie has not been shut, as stated by Baddeley. The little port is so cut off by hills and ridges that its post-town is in Skye. Loch Hourn is thoroughly Scotch—wild and picturesque. I prefer the lower portion of it, particularly the views from the birch-wood at the highest point in the road between Armidale and Glenelg, whence the greater part of the loch, the coast of Skye, and the Atlantic with the bold shores of the lesser islands are all in sight at once. A pious reverence for Dr. Johnson made me follow most of the old horse-track from Glenelg to Shiel House. Loch Torridon is one of the grandest sea lochs. I wonder geologists have not insisted on the traces of glacier action on the great promontory near Shieldag. The ice, while perfectly powerless to remove the obstacle in its path, has scoured the side of the crags opposed to its progress till they are as smooth as glass, and has thrown erratic blocks about in the most lavish manner.

Baddeley calls the walk from Shiel House to Invercannich by Loch Affric 'the grandest pedestrian route, in Scotland,' and I am not prepared to gainsay him. There are, as usual, ten dull miles near the watershed, but the whole descent of Glen Affric is very beautiful. The scenery keeps up its interest all the way from Loch Affric to within three miles of Beaully—that is, for about thirty miles. The river flows through a narrow gorge, or expands into beautiful lakes and reaches, the nearer hills are clothed in birch forests, and the forms of the landscape have more than the usual grace of Scotch scenery. I should not have said thus much in confirmation of the guide-book's excellent description

and map had not I learnt both from the host at Invercannich and from subsequent conversations with friends how few sturdy tramps make this 'variation' from the Highland Rail. I may add that the prettiest path lies along the southern shore of Loch Affric, and not the northern, as stated by Baddeley.

D. W. F.

KILIMA-NJARO—It seems desirable in the interest of mountain exploration that attention should be directed to the loose use of the expression 'ascent' made in many geographical publications of authority. An ascent of a mountain, properly so called, is an ascent to the summit of the mountain, not necessarily, perhaps, to its loftiest crag or ice-comb, but at any rate to the highest crest. Where the title 'ascent' is transferred to an ascent in this respect incomplete, it not only serves to obscure the history of exploration, but also to check adventure and discovery. If Dr. Meyer's attempt on Kilima-njaro was an ascent in the true sense of the word, an incentive to further enterprise has been removed from himself and others. It appears certain, however, that it was not so, and should not have been so described. Several accounts of Dr. Meyer's expedition have appeared in Germany. We take as the basis of these remarks the preliminary report sent by him to the Verein für Erdkunde in Leipzig, and published with a map in 'Petermann's Mitteilungen' for December last; and a statement made by him to the Berlin Geographical Society on December 3.

On July 9 last, the third night after leaving the native village of Marenga, Dr. Meyer and his companion, Lieutenant von Eberstein, camped at a height of 4,300 mètres (13,210 feet). Here the first patches of snow were met with. Eight of his native attendants refused to go further, and the travellers were left to continue their march with three negro porters. They followed in a N.W. direction the base of a line of five small volcanic cones connecting Kibo with the lesser summit of Kimawenzi (16,252 feet, Kersten). They camped at the foot of the last of these cones after eight hours' walk, during which they already suffered from the rarity of the air, at a height variously given as circa 5,000, 4,900, and 4,700 mètres (16,408, 16,078, and 15,422 feet). We accept the middle figure (that given on the map in Petermann), as most probably that which Dr. Meyer prefers. The three negroes were sent back with instructions to return on the second day. The cold in the night was 12° Fahr. (−11° Cent.).

The mountain presents on this (the S.E.) side a vast dome. Ridges of lava descend from near the top, separating beds of hard eternal snow, the lower limit of which is stated at 15,400 feet on the S. and S.W. sides, and 18,000 feet on the N. and E. sides of the dome. For some time all went well; the sky was clear and the snow hard. But the climbers found the labour of climbing three-times as exhausting as at lower elevations. At the end of three hours Dr. Meyer inspected his instruments, and found that the needles of his two aneroids had passed 5,000 mètres and begun to go round again—that is, as we read it, they had become useless. Mists now came on, and the thermometer fell 5° Fahr. below freezing point. In three-quarters of an hour more Lieutenant von Eberstein broke down, while Dr. Meyer pushed on to a snowfield strewn with glacial fragments, above which

he saw looming in the mist a wall of ice only some twenty yards distant, but inaccessible to a solitary climber. Dr. Meyer believes this wall to have been the actual outer edge of the crater, and he estimates its height at 110 to 130 feet above him. The total height of the peak he estimates (map) at 6,050 mètres (19,852 feet). He was suffering at this time from exhaustion, giddiness, palpitation, and want of breath. Despite these physical hindrances and a driving snowstorm he noted his barometers (? the aneroids) and thermometers before hurrying back to his friend. On rejoining him he rested, while the lieutenant took observations with a boiling-point thermometer. They then returned in two hours to camp, after an absence of, in all, seven hours.

Several matters require further explanation in the foregoing account. It is quite clear that not more than $4\frac{1}{2}$ hours, including halts, were spent in the ascent. It is highly improbable that a man, not only untrained, but suffering seriously, should have climbed at a rate of nearly 1,000 feet an hour at that height over rough ground. Mr. Whymper achieved this feat, it is true, in his *second* ascent of Chimborazo, but this was after months of training at great altitudes. In his first ascent he and his guides only made half the height (500 feet) in the hour. Again, Kilima-njaro has been very carefully triangulated by Baron von der Decken's companion, Herr Kersten, whose repeated measurements, which are regarded with confidence by critics well qualified to judge, give a result of 18,681 feet for the top of Kibo. Geographers must have very strong proof of the accuracy of Dr. Meyer's observations before they can consent to upset the received figures. At present Dr. Meyer's estimate seems hardly reconcilable with the time occupied in his ascent. Possibly he has himself arrived at the same conclusion, for he is represented in the 'Globus' (liii. 2) to have stated at Berlin the height of Kibo as 5,692 mètres, or 18,677 feet.

It appears, moreover, open at least to doubt whether the ice-wall Dr. Meyer saw was really the actual crest of the crater, or the lower edge of the glacier hanging from that crest. It is certain from Mr. Johnston's sketches that in many places the glacier extends some hundreds of feet down the flank of the mountain. However this may be, it is obvious that, no part of the summit ridge having been attained, no information is as yet forthcoming as to its character and dimensions, or as to those of the crater it encloses. Dr. Meyer himself proposes to make another attempt to ascend the great mountain on which he has so gallantly failed. We wish him most heartily full success, and there seems every reason to anticipate it if, as he believes, he has ascertained that the N. side of the dome is unprotected by the ice and snow obstacles, which led to his recent defeat.

The map published in 'Petermann' has, it may be noted, no scale, and the contour lines are imaginary. The lesser peak of Kimawenzi is marked as bearing glaciers, which is remarkable. The distinction between Firm and Gletscher is not always grasped by English translators, and Dr. Meyer is not responsible for a mistake arising from this cause on p. 45 of the January 'Geographical Proceedings'; but in the case of Kimawenzi the word used is Gletscher.

Those who wish for further information as to the great African volcano will find it in Baron von der Decken's excellent and thorough work, and in Mr. Johnston's very readable volume.*

P.S.—Since this note was written Dr. Meyer has, in the 'Mittheilungen' (January) of the D. und O. Alpenclub, published a further narrative, which fully justifies the doubts expressed above. He now fixes the height at which he left his companion at 17,060 feet, the further ascent he made alone at 820 feet (1 hr. 24 min.). For this height he apparently relies on his overworked aneroids! He altogether abandons his new estimate of the height of the mountain published in 'Petermann,' reverts to Kersten's measurement, and allows that the highest point he reached was probably over 800 feet below the true summit, though close, he believes, to the crater-ridge on the side by which he approached it.

D. W. F.

SNOW-BLINDNESS †—Dr. Scriven, in his notice of a preventive for snow-burning, in the last number of the 'Alpine Journal,' does not mention snow-blindness, which is a very serious matter for those who chance to suffer from it. I had the misfortune to undergo an attack in the Himalayas, which resulted from crossing the Manji Kanta Pass early in June 1861. This pass leads from Jumnootri to the Tonse Valley, and although not of great height, being 13,500 feet only, yet, being on the Indian slope of the Himalayas, it receives a large fall of snow, and even in June we had a long tramp upon it. I had a green veil, but found it troubled me while struggling through the snow, and it prevented me from seeing either the way or the views around; so I took it off, and I found no ill effects at the moment. Here lies the danger. Before going to bed at night the eyes felt uncomfortable, and I waked early in the morning with the feeling that they were full of gritty lumps of some kind or another. I got a dish of water, and bathed them at intervals; but I could not march that day, a failure which might be serious at times in mountaineering. Before night I again felt nearly all right.

In 1873, when in California, I learned there that the trappers who had to cross snowy mountains were in the habit of blackening for about an inch round their eyes, and that this was a sufficient preventive. A burnt cork will do to produce this, or any kind of black paint—a most simple remedy. I have not tried it myself, but I was told that the people connected with the Hudson's Bay Company had long practised this means; and that they derived it originally from the Indians. One would have thought that the faces of the Indians would have been dark enough without the burnt cork. The coolies who carried our luggage over the Manji Kanta Pass, were of the usual complexion of natives, and that did not save them. In the early morning, when I was suffering from my own eyes, I heard a group of them at the tent door saying, 'Sahib, hum log rat ke morphic,' which means, 'we are like night,' or stone blind. This would indicate that the ring round the eye should be a substantial black.

* *Reisen in Ost-Afrika*, Leipzig, 1879; *The Kilima-njaro Expedition*, London, 1886.

† See *Alpine Journal*, vol. ix. p. 175.

I had further confirmation of the value of the remedy afterwards. In 1875 an Arctic Expedition was being fitted out, and the papers were full of letters giving advice and hints; and among them was one about snow spectacles to save the eyes. Seeing this, I sent a letter to the 'Daily News,' which appeared on April 23, 1875—in which I described the simple remedy of the burnt cork. This served one purpose at least, as it produced corroborative evidence. Mr. Valentine W. Bromley, a very promising artist, who died young, wrote to give the experience of an American officer on the alkali plains of Nebraska. This officer suffered from the glare of the alkali, and an old trapper told him that if he put a black ring round his eyes he would escape the bad effects. He did so, blacking his cheeks and forehead at the same time, and the result was successful. This officer stated that it had another advantage, it enabled him to see objects at a distance more clearly.

Mr. Joseph Bonomi, the well-known Eastern traveller and Egyptologist, also sent a letter, stating that a similar practice existed in Syria, where the muleteers who were in the habit of crossing the Lebanon from Beyrout to Damascus 'invariably blackened their faces to save themselves from becoming blinded by the intense sunlight reflected from the snow.' In this case the blackening 'was performed by making a paste of gunpowder with water and a little milk or grease in the palms of their hands and besmearing the entire upper part of the face, particularly the cavity of the eye, so that all lights reflected from the surrounding prominences of the face were considerably diminished.'

As already stated, I have had no personal experience of this saving means, but these testimonies, coming from such widely different localities, must surely be of some value. It occurs to me that if some black substance were added to the preparation recommended by Dr. Scriven, it would make it more effective, and give it at the same time the additional virtue of preventing snow-blindness.

WILLIAM SIMPSON.

THE INNKEEPER AT SCHLINIG.—In the 'Alpine Journal' for May last, p. 289, mention is made of a curious local law prevailing formerly in the parish of Schlinig, near Mals, under which the local innkeeper was an elected parish officer. The Editor encourages me in thinking that some readers of the Journal may be interested in seeing the full text of this law. I have therefore extracted it from the third part of 'Die tirolischen Weisthümer,' edited in 1880 by Herren von Zingerle and von Inama-Sternegg. For the benefit of those readers who are not familiar with the High Dutch as written in the sixteenth century, I have translated it to the best of my ability. The last paragraph appears to be 'plusquam-Thucydidean' in its constructions, but I hope I have given its purport correctly. I may perhaps be allowed to add that the whole collection of 'Weisthümer' is full of interest to students both of local customs and of dialectic forms.

A. J. BUTLER.

'Am maientag soll man ain pauerschaft halten, ainen jeden herren von Sand Muriaberg wo es anhaimb wär, oder in seinem abwesen seinen anbalt wissen lassen. Auf denselbigen tag setzt man dorfmaister, saltner, und ainen gemainen würt . . .

‘Vom wirt, wie und sich ain iedlicher wirt halten sol, der soll auch an den maientag furgenomen und gesetzt werden.

‘Welicher zu ainem wirt erwelt ist, der soll innerhalb vierzehen tagen wein im haus haben; thäte ers aber nit, solle er durch die dorfmaister umb ain urn wein gestraft werden.

‘Damit sich aber der furgenomen wirt seines unvermögens nit zu beklagen habe, solle ainem ieden angeenden wirt zu anefang von der gemain vier gulden furgesetzt und gelichen werden; die selben vier gulden sol ain ieder wirt zu ausgangs jares, wann ain ander erwelt ist, dem neuen wirt überantwurten und par hinaus geben, damit der selbig angeent wirt auch zum anfang habe.

‘Der wirt soll erber nach gestalt der jar raitung machen; wirt er aber ungechickt, sollen die dorfmaister einsehen und wendung thuen.

‘Und das ainem erwelten wirt in dem, das er zu der wirtschaft mit wein und ander notturft versehen sein soll, und aber daran kain schad und verlegenschaft an speis und trangk nemen, solle sonst kain ander nachpaur in der gemain vailen wein, würtschaft, noch gasterei umb losungs willen halten, sonst mag ain ieder nachpaur zu seiner hausnotturft frembden und freunden, oder wo ain wirt nit wein der selbigen zeit hiet, wol wein ausgeben.’

‘On Mayday shall a parish meeting be held, and notice be sent to each and every householder of St. Mariaberg, in the event of his being at home, or in his absence to his proxy. On the same day are appointed overseers, watchman, and a parish innkeeper . . .

‘Of the innkeeper, how every innkeeper is to conduct himself, who also is to be on the Mayday appointed and installed.

‘Whoever is chosen to innkeeper shall within fourteen days have wine in his house; but should he not do so, he is by the overseers to be fined one cauk of wine.

‘But to the end that the appointed innkeeper shall not have to make complaint of his inability, there shall to each and every incoming innkeeper at the beginning be assigned and lent by the parish four gulden; the same four gulden shall each and every innkeeper at the year's outgoing, when another has been chosen, surrender to the new innkeeper, and pay down the like sum, to the end that the said incoming innkeeper may also have them to begin with.

‘The innkeeper shall duly, according to circumstances, make account for the year; but if he be unlearned the overseers shall look into it and take order.

‘And to the end that an elected innkeeper, in that he has to be provided with wine and other necessaries for his innkeeping, may over and above that receive no damage and inconvenience in the matter of food and drink, no other neighbour besides in the parish shall retail wine nor keep inn or hostelry for remuneration; nevertheless any neighbour may, according to his own domestic needs, or where an innkeeper has not wine at the moment, dispense wine to strangers and friends.’)

THE WOLFENDORN ‘KIND.’—On October 6, 1887, I started from Gries-am-Brenner at 5.50 A.M., along with Franz Aigner (Wirthssohn

in Gries), with the ostensible purpose of finding a new way up the last rocks of the Wolfendorn (9,095 feet). We took with us a rope and *Steigeisen*. The new snow forced us to deviate considerably from the usual route, but about 10.30 we arrived between the last rocks and the rocky finger so conspicuous from the high ground near Gries, nicknamed by us the Wolfendorn Kind. Here I was surprised and somewhat alarmed to hear that my companion was anxious to try the Kind. The side next us was plainly overhanging, but on moving round to the S.E. side a narrow almost vertical *Rinne* was discovered leading up to a notch between the two summits of the Kind, and by this Franz declared, in spite of my remonstrances, that he meant to try. From the base to the notch was perhaps 50 feet, and the summits, perhaps, 10 to 15 feet higher. We put on the *Steigeisen*. Franz tied the rope round him and started. For about 25 feet there was no great difficulty, but here a rock projecting a little nearly filled up the *Rinne*. There was just room to squeeze in between the rock and the left wall, but there was no hold. At last Franz got a hold above with the hook of his alpenstock, got the spikes of his right *Steigeisen* against the opposite face, and with an effort was flat on the top of the projecting rock. Then again it was easier, and he went round the left-hand peak on a narrow ledge, and in about ten minutes appeared in the notch. After clearing away rubbish to get a good seat, he threw the rope down to me. There was just enough to tie on, and I began. For the first bit, also, I had little difficulty, having the rope. Here I squeezed in between the rock and the wall, but I declared many times I could get no further. At last, however, following Franz's tactics, and taking a good pull at the rope with my left hand, I was landed sprawling on the rock. I declined to go round, as I should lose the support of the rope, and elected to try straight up. Just below the notch was a place which gave a deal of trouble, but at last we were together in the notch. I could only see the line of ascent by craning over. I descended behind this through a crack so narrow that I could not pass one foot before the other on to a small slope of rubbish. Franz joined me by another way, and we went behind the right-hand peak. Here we found a crack just wide enough to squeeze into. Franz got up by aid of his hook, and I followed, holding on to the rope and to Franz's boots. Here we were at the top, but we could only sit round it. There was no room to stand on it. We built a small stone man; Franz chipped our initials on a flat stone, and we prepared to return. To the notch we got without difficulty; but when seated, ready to commence the descent, I hesitated long. It seemed exactly like throwing one's self down; once off, it was not so bad. I never swung in the air, as I was afraid I should. The projecting rock was passed easily, and in five minutes I was on *terra firma*. Franz's task was not so easy. I told him to fasten the rope and come down by it, and we would leave the rope. He did so and came down to the projecting rock. Then he thought he could loop the rope twice, and so not lose it. He went up, looped it, and came down, but the rope would not come away, and he had to go up again. This time it succeeded, but it was a hard matter to loop the rope over the flat rock. At last he succeeded, and

at 2 P.M. we were both down. Franz had been 3 hrs. 20 min. engaged with the Kind; I only 2½ hrs. Gries was reached at 5.30. I was very stiff for a day or two, but otherwise felt no ill effects.

J. SOWERBY.

BOUNTY FUND FOR GUIDES IN THE ORTLER DISTRICT.—The Hamburg section of the German and Austrian Alpine Club has just set on foot a new scheme for assisting guides. It seems that a sum of 225*l.* has been collected for a memorial to the late Dr. Ferdinand Arning, who held high office in the section. Dr. Arning had taken a great interest in the Club fund for the assistance of guides, and the Hamburg section have resolved to perpetuate his memory in a way that would have approved itself to him. They have founded an 'Arning Fund,' with the object of aiding any needy guides in the Ortler district (Dr. Arning's favourite resort) and their relations. It is hoped that the 225*l.*, which forms the original capital, may be increased by further donations. The Hamburg section have engaged to subscribe 5*l.* a year. The interest on the total capital will be distributed annually, the administration and property being vested in the Hamburg section. This is, so far as we know, an entirely new departure, for the regulations do not state that the guides assisted shall have become incapacitated for work in consequence of injuries received in the exercise of their profession. The scheme appears, on the face of it, to be merely a charitable fund for aiding a certain class of the poorer inhabitants of a particular Alpine district, and we shall be curious to know how it is found to work.

CONGRESSES OF THE FOREIGN ALPINE CLUBS.—The Swiss Club held its annual meeting at Bienne from August 20 to 22 last. The discussion largely turned on certain modifications of the Club statutes which were adopted. Hence the government of the club will be vested for four years (instead of three) in one or other section, and the 'Clubfest' will only take place every other year, though delegates from the thirty-two sections will meet every year. For the period 1887-91 Section Tödi (Glarus) will administer the club affairs, while the next 'Clubfest' will take place in Zürich in 1889. There was a very lively discussion on Alpine accidents brought on by the Oberland section, which demanded a formal expression of disapproval of expeditions made without guides; but strong objections were urged against such a course, as the club had already caused to be circulated and put up in the Swiss hotels a warning to all travellers against imprudent climbing, and had published Herr Baumgartner's pamphlet on the dangers of mountaineering. The negotiations for the admission of the Club Alpino Ticinese as a section of the S. A. C. have nearly been brought to an end. The special district for 1888 and 1889 is to be the group of the Graue Hörner, on the borders of S. Gallen and Graubünden. It was announced that the S. A. C. had, together with other societies, issued a protest against using the falls of the Rhine at Schaffhausen for industrial purposes; and that 105 guides (82 belonging to the canton of Berne) had insured their lives for a gross sum of 303,000 francs, towards which the S. A. C. contributed 3 per cent., or 909

francs. 162 persons sat down to the banquet, which seems to have been as successful as usual.

The Italian Club met at Vicenza on August 27 and following days, making an excursion to the Sette Comuni. The number present was over 300, the largest hitherto recorded. It was resolved to form a fund for helping Italian guides who are for a time or permanently disabled from following their profession, or, in case of death, aiding their families. The club numbers thirty sections, comprising 4,025 members. The meeting in 1888 will be at Bologna.

The French Club met in the Vosges from August 9 to 18, Belfort being the centre from which many excursions were made. The meeting was attended by about 200 members and their friends.

The German and Austrian Club met in Linz from August 20 to 22, this meeting being followed by a gathering at Radstadt to celebrate the twenty-fifth anniversary of the foundation of the Austrian Alpine Club, one of the two societies which joined together to form the D. und Ö. A. V. About 250 members attended the Linz meeting. The 1889 meeting will be at Lindau. The united club numbers 155 sections and 20,004 members.

REVIEWS AND NOTICES.

Zur Erinnerung an die vor 25 Jahren erfolgte Gründung des Oesterreichischen Alpenvereins. (Vienna: R. Lechner, 1887.)

It may seem rather premature to write the history of the various European Alpine Clubs. It is, however, very desirable to put on record an authentic account of the origin of each before the founders have passed away and while materials are still abundant. Hence several of the principal clubs have thought it well to publish some sort of history of themselves. That of the Alpine Club, the oldest of all these societies and now just over 30 years old, will be found in the appendix (pp. 83-94) to vol. viii. of this Journal; while that of the Italian Club (founded October 1863) was worked out by Signor Isaia some years ago in an interesting pamphlet noticed in these pages.* No doubt the Swiss Club (founded April 1863) will this year celebrate its 25th anniversary by issuing an historical account of its doings. This the Austrian Club did last year in the illustrated pamphlet now lying before us.

At the close of the annual congress of the German and Austrian Club in 1887, at Linz, many of the members journeyed on to Radstadt, where, on August 24, the Austrian Club celebrated the completion of the first quarter-century of its existence. The pamphlet we are noticing is intended to be the permanent memorial of this festival. It contains the interesting oration delivered by Herr von Mojsisovics, and a detailed history of the club by Herr Emmer, together with lists of its publications, its presidents and committees, the still surviving

* *Alpine Journal*, vol. xi. p. 125.

founders, and its annual balance sheets, while it is illustrated by several woodcuts. It is the first time, we believe, that an authentic account of the origin of the Austrian Club has been given to the world, and it deserves notice on several grounds.

It must be borne in mind that the Austrian Club—founded in 1862—is the eldest child of the Alpine Club. Hence it was the first Alpine Club on the continent of Europe, and the first which had its headquarters in a mountain land, for the greater part of the Eastern Alps are in Austria. Its foundation, therefore, marks an epoch in the history of Alpine travelling. It was due to the energy of three young law students at the University of Vienna—P. Grohmann, E. von Mojsi-ovics, and G. von Sommeruga. They issued an appeal for aid in their undertaking, which was so well responded to that at the meeting on November 19, 1862, when the club was constituted, they had gathered together a band of 627 adherents, 450 of whom resided in Vienna. The two main objects sought to be attained were the complete exploration of the Alps and the initiation of practical measures for making the mountains accessible, by improving means of communication, drawing up regulations for guides, &c. The early efforts of the society were chiefly directed to the former object, though in 1863 the first set of regulations for guides (for Salzburg) was issued, and in 1868 the first club hut built (Rainerhütte, in the Kaprunerthal)—both the forerunners of many similar projects in the Eastern Alps. Hence special attention was paid to the publications issued by the club, which contain many very valuable and important articles. Some of the more energetic members (among them the three founders) thought, however, that practical measures were too much neglected, and, being defeated in the winter of 1866–7 on a motion they laid before the committee, they resigned their seats on the committee. Their aim was twofold—to make practical measures, rather than literary activity, the chief work of the club, and to give the provincial members an interest in the general affairs of the society by establishing local sections in the mountain towns, and by entrusting the management of club affairs to one or other of these sections according to rotation. The ‘reform movement’ attained considerable dimensions, and resulted in the formation of two new Alpine societies—the German Alpine Club and the Austrian Tourist Club, both founded in 1869 by former members of the Austrian Club. The first-named at once formed local sections, and devoted itself mainly to practical measures, while the ‘Tourist Club,’ agreeing in the latter point, preferred a centralised administration. Thus the origin of the German Alpine Club, as is clear from the authentic facts now first made public, was due to differences in matters of club administration and not to political motives, as is often supposed. It founded a section in Vienna, which naturally did harm to the existing Austrian Club. Very soon, attempts were made to heal the schism. This was partly effected in 1872 by the joint publication (though only for a single year) of a volume of papers, and finally on January 3, 1874, when the Austrian and German Clubs formally united under the style and title of the ‘German and Austrian Alpine Club.’ The Vienna section of the German Club and the still remaining

adherents of the Austrian Club residing in Vienna were fused together as the 'Section Austria' of the new joint society. This union has greatly tended to the prosperity of both societies. The German and Austrian Club is now the largest in the world, numbering 20,004 members, forming 155 sections. Of these sections 'Section Austria' is by far the largest (in 1886 it had 1,668 members) and most influential, concentrating its energy mainly on practical measures. Two of its numerous works are distinctly original—an art union for pictures of Alpine subjects (started 1880) and the distribution of Christmas gifts to the inhabitants of certain of the Alpine valleys (from 1884 onwards). We are told that no fewer than 123 of the founders of the Austrian Club are still members of the joint society—the best possible proof of the historical continuity of the two clubs.

We have been thus detailed in narrating the history of this great club not merely because of its intrinsic importance in Alpine history, but because great confusion prevails in England as to the chief Alpine societies in Austria. It may be added, for the sake of completeness, that in 1878 a society was founded in Vienna under the name of the 'Alpenclub Oesterreich,' which in 1884 formally assumed the name of the 'Austrian Alpine Club,' to which, speaking from a purely historical point of view, it appears to have had no right.

The Alpine Club may well feel proud of its eldest child, which has done so much for the comfort of travellers in the Eastern Alps and contributed so largely to their minute exploration. The relations between the mother and daughter have always been very friendly. Herr von Mojsisovics, the actual president of the society, has been for some years an honorary member of the Alpine Club; while Herr Emmer in the course of his narrative pays a graceful compliment to Mr. Tuckett, 'one of the truest friends of our Society from its very beginning.'

We congratulate the Austrian Club, both as an independent club and as a section of a large body, on the great work it has done for the Eastern Alps, and we have every reason to believe that its future will be even more brilliant than its past and present.

Jahrbuch des Schweizer Alpenclub, vol. xxii. 1886-7. (Bern.)

This volume is somewhat smaller than its immediate predecessors, and also lacks the excitement supplied in so many of the previous volumes by the enterprising ascents of Herren Purtscheller, Schulz, & Co. In the preface the editor complains bitterly of the trouble he had in pruning the sectional reports. One of these in particular was long enough to fill the space in the 'Jahrbuch' allotted to the whole of them. This may well have been section Basel or St. Gallen. In the former of these Herr August Lorria records a list of thirty ascents and passes, of which the Adlerhorn and Galenhorn are new; * in the latter Herr Schulz records twenty-eight, of which Monte Adame, Monte Fumo, and Cima Rossa are new; and Herr Purtscheller no less than ninety-

* *Alpine Journal*, vol. xiii. pp. 123, 172.

two, of which about twelve are said to be new. Most of these expeditions were without guides. We read now of expeditions of the highest order of difficulty being made not only without guides but by solitary tourists; and it can hardly be doubted that this practice, at once cheaper and more fascinating, will increase in spite of the efforts of the Swiss Alpine Club to discourage it, with a corresponding increase of accidents, of which the season just closed shows an enormous number.

The only new ascents not already described in the 'Alpine Journal' are the Doigt, the second highest peak of the Dent du Midi, by MM. Beaumont and Wagnon, and the passage of the Bächli Lücke, and ascent of the Brunberg (Grimsel district) by MM. Monnard, Montandon, and Liechti.

The last new route possible up the Balmhorn was made by Herren Dübi and Liechti. Starting at 3 A.M. from a bivouac in the cave (Balm) on the Lotschen glacier, they mounted to the Regizi Furke. Hence the S.E. ridge of the Balmhorn was gained with great difficulty. The summit was not gained until 5.45 P.M., and Schwarenbach was reached by the usual route in the dark.

There is a strange incongruity in the accounts of the ascents of the Jungfrau by the S.W. ridge.* Herr Körber in an ascent by this route, August 31, with three guides, two of whom, Ulrich Brunner and Karl Schlunegger, made the first ascent, says that after reaching the Platten the party were for two hours struggling with continual difficulties. They had continually to ascend by ledges only a few inches broad; at one point Brunner declared that if anyone slipped he could not hold, and actually took the rope between his teeth. Owing to these difficulties and also to the indisposition of Herr Körber, the party did not reach the summit till 2 P.M., and the Bergli hut till 10.25 P.M. Herr Körber concludes that this route is free from the danger of falling stones and avalanches, but far more difficult than has been stated. Probably the difficulty varies much with the conditions, such as absence of snow and dryness of rocks. Much also must depend on the condition and experience and activity of the tourist.†

The Special District is to be kept on for another year. The Itinerary is for the first time divided, the present volume containing only the geological description. In future it is proposed to devote quite a series of articles to the Special District, describing its fauna, flora, &c. It is doubtful, however, whether the Special District will not be dropped altogether. It was originally started with the hope that by the observations of members of the Swiss Alpine Club the maps of the Federal Survey might be corrected and perfected. But these corrections never came up to expectation, and even when made were not admitted by the Bureau without verification.

The observations of the Rhone glacier have now been carried on for

* Is Herr Hans Körber (Bern) the same as the Herr Körber who perished last summer on the Morgenberghorn (*Alpine Journal*, vol. xiii. p. 398)?

† The descent by this route was first made on July 21, 1887, by the guides Fritz Steiner and Hans Graf, who, after searching for the party that perished on the Jungfrau, descended in five hours to the Roththal hut. (*Alpine Journal*, vol. xiii. p. 393.)

thirteen years. During these the glacier has passed its minimum, and is now preparing to advance. Dr. Forel considers the period of a glacier is the time which elapses between two minima. The phenomena of the increase are now definitely established to be (1) the thickening of the névé; (2) thickening of the exposed ice; (3) increase of width; (4) prolongation of the front. The phenomena of retreat and their order have yet to be observed. The length of the period is very variable. In the case of the Vernagt glacier there were five periods between the years 1599 and 1840, the shortest being twenty years and the longest ninety-three years.

Herr Meyer v. Knonau relates an interesting episode in the conquest by the Swiss of the districts in the Milanese which now form the Canton of Tessin—the war of Irnis (Giornico). In the year 1478 the Federal army, after vainly beleaguering Bellinzona, retreated across the St. Gothard Pass, leaving a garrison of some 500 men in Giornico and neighbouring villages. The Milanese army, 14,000 to 15,000 strong, advanced to attack them, but were repulsed (December 28) with great loss in the gorge between Giornico and Bodio, leaving 1,500 dead on the field.

In one article in this volume a new line has been struck out, which may lead to important results. An officer of the Ordnance Survey has drawn up a series of questions to be answered by members of the Swiss Alpine Club on their excursions as to the capability of roads for the passage of troops, artillery, &c., and of the villages for accommodating them, the suitability of the ground at and near the summit of passes for defensive purposes, &c. The editor in an account of an ascent of the Naafkopf (Western Rhetian Alps) approves greatly of this idea.

The report on the Matterhorn catastrophe has already been discussed in the 'Alpine Journal.'*

The central meetings of the Swiss Alpine Club were mainly occupied with drawing up a new set of rules for the regulation of the Club huts. The great difficulty is that of regular inspection. The huts are never to be locked. This increases the danger of misuse by casual parties, but is otherwise a great advantage. Herr Kamlah, in his article on the 'Mountains of East Tirol,' points out the great inconvenience arising from the Club huts in Tirol being invariably locked.†

Besides illustrations in the text there are also in a case a panorama from the Beichgrat, by Herr S. Simon, who adds an interesting disquisition on the conditions required in the drawing of a panorama from the point of view of the geologist, topographer, or artist; and a map of the western Stockhorn chain, by Herr R. Leuzinger. The shading of this and of the map of the Special District (vol. xxi.) is of doubtful value, as the lettering is in many cases rendered more obscure. The contour lines seem to supply all the information required as to the nature and steepness of the slopes. The club now

* *Alpine Journal*, vol. xiii. p. 421.

† The writer of this review was on one occasion with a party who, after vainly endeavouring to obtain either a guide or the key of the hut, had to make their entrance and exit through a hole in the roof, a work of more difficulty than the subsequent mountain ascent.

numbers 32 sections, with 3,062 members. The balance at the end of 1886 was 3,483 francs, and the amount to the club's credit 19,387 francs. J. S.

L'Echo des Alpes: Publication des Sections Romandes du Club Alpin Suisse.
(Geneva: J. Jullien.)

The three parts of the 'Echo' for 1887, already issued, contain an unusual number of valuable and interesting papers. There is the conclusion of M. Cart's papers on the little-known mountain group between the St. Gotthard and the Simplon, and a very vivid and useful paper by M. Tschumi on his expeditions in 1886 in the Valais, mainly in the ranges round Arolla. It seems odd that explorers of this group never refer to the Valtournanche and Ollomont sheets of the new Italian Survey (on a scale of $\frac{1}{1,000,000}$), which afford much new and accurate information as to the Italian slope of the ridge between the Col des Bouquetins and the Great St. Bernard. M. Montandon gives us an account of a guideless ascent of the Gspaltenhorn, a fascinating peak which once enjoyed a very great reputation, but seems now on the verge of 'being found out.'

The most substantial and weighty article of all is that by M. Eug. de la Harpe on the 'Massif du Trient,' a detailed historical account of the exploration of the ridges round the Trient and Orny glaciers. It is, however, a pity that he has only referred to Studer's inaccurate summary of Forbes' and Wills' passages from the Tour to the Oyrn glaciers, and to Dufour's translation of the first series of 'Peaks, Passes, and Glaciers.' It is only fair to the author to say that he is much troubled by expressions in these translations which become perfectly clear when the original text is referred to. We understand, and are glad to hear, that he intends to carry out his original project by publishing a similar monograph on the rest of the Swiss portion (the Laneuvaz and part of the Saleinaz glaciers) of the Mont Blanc chain. His article seems already to have stimulated fresh explorations, for M. Beaumont started off in June last to clear up the mystery hanging around the ascent of the Pointe des Ecandies (2,886 mètres), and did clear it up, for he found that there was no stoneman at all on the summit. He succeeded too in forcing the Aiguille du Tour from the Glacier des Grands. There is also a note by 'E. C.' on the seven summits of the Dent du Midi, which even the new edition of the great Swiss map has not placed in their proper order; and M. Colomb describes a real first ascent made by him in July 1887—the Aiguille Verte de Valsorey (3,503 mètres). In another part of the present number of the 'Alpine Journal' we have summarised the letters published in the 'Echo' on the new Valais regulations as to guides. Our space only permits us to mention other papers on the mountains near the Grande Chartreuse, in Dauphiné, on Alpine botany and photography, on the Swiss Alpine Club fête at Bienne, and the De Saussure fête at Chamonix.

The 'Echo' has always enjoyed a high reputation, and the articles in the 1887 volume will certainly raise it even higher.

Das fröhliche Murmelthier : allerlei Sing-Sang für Schweizer Alpenalubisten.
Zusammengestellt und herausgegeben von Gottfried Strasser. (1887.
2 francs.)

Prince Lucifer. By Alfred Austin. (Macmillan, 1887. 6s.)

These two books may be noticed together under the head of Alpine poetry, though in nearly every respect they are widely different in character.

Herr Strasser, the well-known pastor of Grindelwald, has collected in a handy little volume many songs, patriotic, pathetic, and potatory, and has given it the quaint title of the 'Joyful Marmot.' The intention is very similar to the 'Liederbuch' of Herr Bletzacker (noticed in our number for August last, p. 341), both being intended for the use of 'clubbists' on the war path. Herr Strasser, however, gives no music, the pieces he has selected being fitted to well-known airs. The number of pieces is no less than 104, some in dialect, and includes all the favourite Swiss ditties, so that the collection will be very acceptable to all lovers of Swiss music and minstrelsy. Some of the lighter pieces are from the pen of Herr Strasser himself, and run very smoothly. Among these we like best a satirical poem on the supposed Arabic inscription on a big boulder at Mattmark (which turned out to be simply the rough drafts of the accounts presented by the innkeeper to his customers), and several sets of verses on club huts, with or without wood, open or shut. There is much for men of every taste in this little book, which will doubtless become a constant companion of all visiting the heights where dwell the real marmots, who will perhaps not be too pleased at the arrival of a fresh swarm of marauders.

Mr. Austin's new poem has a distinctly Alpine flavour about it. The scene is laid in a valley which is easily identified with that of Zermatt; there are many local allusions, and the chorus consists of the Matterhorn, the Weisshorn, and the Vispthal torrent. There is the inevitable hit at unlucky climbers, but it is more wittily put than usual (pp. 64-5).

'First Peasant: Have the Englishmen gone?

'Guide: Yes, before the mist curled. Nothing stops those people. When they want to climb, they take the weather for a lackey, and fancy it will turn all ways to please them. Because the sun shines here, they think it will follow at their heels like a beggar, till they give it something, or tell it to go away.

'Second Peasant: Will they return, think you?

'Guide: Likely enough not; I don't like the look of the Weisshorn. Then, perhaps, they'll be content. I suppose life comes so easy to such folks, they covet death.'

But we will pardon Mr. Austin for this sneer at us, for he gives us some very beautiful word pictures, such as that of the 'Sea of Silence' (p. 8), and the rather pantheistic description by Count Abdiel of his chapel 'on the snowy peaks' (p. 31). On the other hand there are some bits which are rather ludicrous from an Alpine point of view. It would be interesting too to know the exact time fixed by Prince Lucifer for his tryst with Eve,

When steals the shadow of the Matterhorn
On to the Weisshorn, we again shall meet.

Bollettino del Club Alpino Italiano per l'anno 1886. No. 53. (Turin, 1887.)

Of late years there has been a growing tendency on the part of careful writers on Alpine matters to make a special study of any mountain group in which they may be particularly interested. We have nothing but praise for work of this kind, which sets forth accurately and fully all the topographical and historical facts relating to such a group. Of this tendency there are two excellent examples in the new 'Bollettino.' Signor A. E. Martelli publishes a very minute and elaborate account of the Verra and Ventina glaciers, at the head of the Val d' Ayas, as well as of the peaks and ridges which enclose them. He gives us a revised map and several illustrations, including a superb photograph, by Signor V. Sella, of the S. side of the Zermatt Breithorn, which makes us wish that Signor Martelli had given us the same gentleman's photograph of the S. side of the Twins (instead of a mere tracing of it), which joined on to the former would have presented us with a complete and accurate view of the whole of the Ayas glaciers. Signor Martelli's paper gives us perhaps too many new names (*e.g.* the Breithorn ridge now rejoices in five!), though we allow that, at least in some cases, such a course helps greatly to prevent confusion in the future. This admirable monograph is usefully supplemented by Signor L. Vaccarone's interesting historical paper on the house of Challand, the lords of the whole Ayas valley, whether in their own right or as tenants of the Abbey of St. Maurice, in the Valais. It is specially concerned with the narrative of a disputed succession in the fifteenth century, but sketches the whole history of the family of Challand (extinct in 1802) on the basis of unpublished documents. We note that certain villages in the valley were formerly bound, as a condition of their tenure, to cover with earth the glacier of Becca-Torcè, in order that the glare from the snow and ice might not injure the complexions of the ladies of the family! In those days the remedies against sunburn suggested recently in these pages by Dr. Scriven and Mr. W. Simpson were clearly unknown. The other study of a special mountain group is that by Signor Brentari (aided by Signor G. Marinelli) on the Pala range, in the Primiero Dolomites. It is extracted from a forthcoming guide for that district, and seems to be quite exhaustive, displaying great personal knowledge of the district as well as of the literature relating to it.

Signor Vallino describes a new col—Colle Baretti—between the Rossa Viva and the Becca di Gay, in the Cogne district; and Signor Martelli sends a rather belated account of some new expeditions made by him in the same district as far back as 1874—Punta di Ceresole, Rossa Viva, and Tête de Money, the latter name being taken from these pages,* having been given to the peak by a party in 1885, who were unaware of Signor Martelli's expedition, now mentioned for the first time. Signor Vaccarone sends some corrections and additions to his valuable list of first ascents in the Alps, contained in the 1885 'Bollettino' and noticed by us last year. Signor Piolti describes a number of small climbs round Césanne, an admirable centre, and gives us much

* Vol. xii. pp. 416, 512.

valuable information on the natural history, and particularly the dialect, of that district.

Other articles describe the Apuan Alps, in the northern Apennines (illustrated by a panorama from the Rondinaio), and the Monti Sibillini, in the central Apennines—both groups which seem to command very fine views and to deserve more attention from foreign travellers than they have hitherto received. Father Denza, of the Moncalieri Observatory, writes on the variation of temperature according to height, laying special stress on the curious phenomenon of the inversion of the temperature—that is, the observed cases when the temperature during the winter season rises (instead of falls) up to the height of 700 mètres. Major Gallet has invented an ingenious 'optical Alpine telegraph,' a sort of portable and easily worked heliograph, by means of which parties on different peaks may communicate with each other. This might be useful in the case of accidents, provided that the weather is fine.

Last, but not least, we have a pleasant account of Alpine legends, grouped under different heads and compiled by Signora Maria Lopez. It is very interesting, though in parts somewhat superficial, for the subject is one which requires a book rather than an article. It is, however, a very handy and popular collection of tales, brought together from many sources, and should attract all those who love the Alps but cannot get up much interest in Alpine topography.

On the whole the new volume of the 'Bollettino' is fully up to the high standard attained by its predecessors. Some of the articles therein contained are important; all are interesting.

Guida Illustrata della Valle d'Aosta. Per C. Ratti e F. Casanova.
(Turin: Casanova, 1888. 4s.)

The opening of the railway from Ivrea to Aosta, and the fact that Gorret and Bich's well-known guide was brought out in great haste for the Alpine congress at Annecy, are, so the preface informs us, two of the main reasons which have led to the publication of a new guide book to the valley of Aosta. It is distinguished from its predecessor by the far greater detail with which the Roman and mediæval buildings and ruins in the valley are described, a very interesting and valuable feature, though one scarcely falling within the province of this Journal. The Alpine portion of the book is distinctly subordinated to the architectural and antiquarian chapters, and hence the publisher promises us shortly a remodelled and enlarged edition of Corona's 'Guide Manuel du Touriste dans la Vallée d'Aoste.' We must allow, however, that Signor Ratti has worked very well indeed within the narrow limits to which he was restricted. His indications (for they are hardly more) as to the various high peaks and passes in the ranges surrounding the valley are most accurate and precise, though here and there one notices gaps. He is well up in recent explorations, but unluckily not nearly so detailed as Gorret and Bich, whose notes, on the other hand, were often very vague. We are glad to see an acknowledgment (p. 386), albeit a grudging one, that Mr. Graham made the first com-

plete ascent of the Aiguille du Géant. It is announced too (p. 258) that the owner of the Prarayen chalets intends to open there in 1888 a small Alpine inn, an advance which has been long called for, and which ought greatly to promote the exploration of the Valpellina district.

A great number of illustrations accompany the text. The 'phototypes' are very good, though sometimes faint and blurred; but we cannot say as much for many of the other cuts, simply reproduced from Gorret and Bich and now more worn than ever. The map too is substantially a reprint from that in the former book, though it has received considerable corrections. There is also a plan of the city of Aosta, a panorama from the Cramont, and a very full index. The printing of the book is good, and it will be of service to all visitors to the valley, despite its comparative brevity on purely Alpine matters. We may be permitted to regret that it is written in Italian, as French (or Burgundian) is the historical language of Aosta, and Gorret and Bich's book is very fitly in that tongue. Still we welcome this book as a valuable addition to the traveller's library, and especially interesting to Englishmen, for the great Anselm of Bec, Archbishop of Canterbury, was a native of Aosta. His memory is still preserved there in the name of a street and in that of the local antiquarian and literary society.

Annuaire du Club Alpin Français. 13^{me} année, 1886. (Paris, 1887.)

There are many interesting articles in the new 'Annuaire' of the French Club, though none of any very great importance. From a purely mountaineering point of view those by Mr. Swan and M. Maître are far the best. The former spent two months in the three great French ranges—the Dauphiné, Mont Blanc, and the Pyrenees—accomplishing a great number of expeditions, especially as he started with an imperfectly healed dislocation of the right shoulder. M. Maître employed a short holiday very profitably in Dauphiné and the Tarentaise.

M. Paul Guillemin gives us an interesting study of the two old glacier passes of Dauphiné, the Col du Clot des Cavales and the Col de la Coste Rouge, but seems to be unaware that he has simply touched the fringe of the really enormous amount of topographical information on the district to be found in the old maps and books. M. Duhamel and M. Gariod reprint the full text of the very curious and important narrative of a visit made to La Bérarde and the Col du Says in 1786 by the Dauphiné botanist Dominique Villars.

The Mont Blanc district is rather badly treated this year, despite the odd description by M. Puiseux of his ascents 'par train express' from Paris and back and M. Vallot's scientific examination of the Aiguilles. We referred in our last number (p. 422) to M. Vallot's caustic remarks on the Chamonix regulations as to guides. We hope they will have the effect of urging on the French Club to remedy such a crying evil, which is causing Chamonix to be deserted by all climbers who mean work. In the Tarentaise and Graians we are presented with a paper on the final conquest of the Aiguille du

Fruit, a rocky peak of which the last bit had hitherto resisted all attempts, and a pleasant description of the passage of the Col de la Goletta from Tignes to Aosta, better known to English climbers as the Col de la Gailletta. There are the usual instalments of papers on the Pyrenees—an apparently inexhaustible field—by Count Henry Russell, M. de Saint-Saud, and others, besides two geological articles on the same chain. Count H. Russell is, as ever, absorbed by his grottoes on the Vignemâle, and bitterly resents the comparison of his favourite mountain to the Buet, suggested in these pages by Mr. Freshfield. In 1886 he spent no less than ten days in them, and seems on the highroad to becoming permanently a troglodyte. As was to be expected there are detailed accounts of the two meetings held in 1886 by the French club in Algeria and at Briançon, the latter including a very spirited lecture on the Dauphiné, lectures by M. Charles Durier, of Mont Blanc fame, and a curious illustration of the Rue des Masques, a remarkable rock gorge near Guillestre.

A certain number of the remaining papers relate episodes rather of travel than of mountaineering, and describe lands so far apart as Corsica, Iceland, Norway, Sinâi, and Réunion.

M. Levasseur completes his painstaking account of the Alpine chain, as to which we can only repeat our remarks made on the first part. It is very laboriously done, and well done, but of small practical utility.

Professor Forel writes on the periodical variations of glaciers, but one cannot help wishing that he would concentrate his energy on a set of articles for one periodical only, since at present his very valuable observations are scattered far and wide, so that with the best will in the world it is very easy to miss them. M. Charles Durier gives us the latest information as to the Bossons and Bois glaciers, based on M. Joseph Tairraz's photographs. The former is still advancing rapidly; the latter is stationary. M. A. Julien, the professor of geology at Clermont Ferrand, contributes a paper on certain remarkable conglomerate rocks in Auvergne in their relation to the ancient glaciation of the district, which seems to be now a well-established fact. These rocks are simply the remains of ancient moraines. The Marquis de Turenne, who, though a septuagenarian, is still a mountaineer, sends a few notes on the different ways of making knots in ropes, which may be useful to persons bent on solving 'Alpine problems.'

The volume, which is made up of over 700 pages, is accompanied by four maps (Sinâi, Serbal, Réunion, and Pyrenees) and 52 illustrations.

From the annual report of the Direction Centrale we gather that the club is in a flourishing state, though the number of schools which send their pupils on pedestrian journeys ('caravanes scolaires') does not increase. On June 15, 1887, the club numbered 5,575 members, forming 42 local sections, being thus, we believe, the second largest of the great European Alpine societies.

Annuaire de la Société des Touristes du Dauphiné. No. 12, 1886.
(Grenoble: F. Allier, 1887.)

Besides the accounts of the meetings of the S.T.D. and the very useful list of all climbs made in the district in 1886, the new 'Annuaire' contains two 'climbing' and two scientific articles.

Of the former one describes various peaks and passes in little-known and outlying parts of the Dauphiné, mainly in the ranges to the south of the Vénéon valley. The other narrates the history and the crossing of the Col du Sais, one of the oldest passes of Dauphiné, yet hitherto crossed not more than half a dozen times in all, though at least two other parties have been from La Bérarde to the summit. M. Henri Ferrand sets before us the latest information as to methods of taking photographic negatives on specially prepared paper, thus doing away with the main inconveniences of glass slides on a journey in the mountains. The most important paper of all is that by Monsieur Collet (professor of the Faculty of Sciences of Grenoble) on the great ordnance survey of France. He gives us the history of its origin and describes minutely, with the aid of many diagrams and plates, how the surveying was actually carried out. The paper is written with that clearness and precision which Frenchmen alone possess, and by which dry subjects are made interesting. It seems there is a mistake of over $2\frac{1}{2}$ mètres in the determination of the 'Pierre du Niton,' near Geneva, which was taken as the starting-point for the Mont Blanc range. Mont Blanc himself is only 4,807 mètres high, instead of 4,810, having thus lost nearly 10 feet in height. The time which elapses between the commencement of the survey for any sheet and the publication of that sheet engraved and completed is reckoned at from 12 to 15 years, to which *four* more must be added for the revision of the sheet. The publication is thus very slow; and it is also very costly, the average cost of a sheet being 2,000*l.*, of which half goes in the engraving. The whole article contains much interesting information on the French Government map. Speaking from our own experience, we should say that, while the triangulation is perfect, the heights are not unfrequently misengraved, and the topography is here and there very imperfect; but it marks a vast advance on the maps of Bourcet and Cassini.

The S.T.D. now numbers 630 members, while the accounts for 1886 show a small favourable balance on a total of about 450*l.* In 1886 320*l.* was expended on the new inn at La Bérarde, the opening of which on July 1, 1887, marks an epoch in the history of Dauphiné climbing. Future visitors to the district will be much indebted to the S.T.D. for this their greatest, though by no means their only, undertaking on behalf of that wonderful country.

Forschungsreise in den Australischen Alpen, von R. von Lendenfeld. (Ergänzungsheft Nr. 87 of 'Petermann's Mittheilungen.' Gotha: Perthes, 1887. 3*s.*)

Dr. von Lendenfeld, well known to our readers already by his explorations in the Alps of New Zealand, gives us in this pamphlet an account of two journeys to the Alps of Australia, which he made in 1885 and 1886. The mountain ranges of that great continent are

grouped together in its S.E. corner, partly in New South Wales, partly in Victoria. The author gives us much new and valuable information as to their hydrography, fauna, and flora, which we must pass by in order to summarise shortly the more purely mountaineering part of his journey. In 1885 he undertook the exploration of the Kosciusco group, to which the name of the Polish hero was given by a fellow-countryman, Count Strzelezki, who visited it in 1840. This group, lying in New South Wales, is the highest in Australia. Dr. von Lendenfeld ascended its two highest points, Müller's Peak (7,267 feet) and Mount Townsend (7,353 feet). The former had hitherto been considered the loftiest peak in the continent, but Dr. von Lendenfeld proved by measurement with an aneroid barometer that the latter is rather higher. Müller's Peak has a cairn on it, and has been ascended several times. No previous ascent of Mount Townsend is known, though one has very possibly been made. Neither point offered the slightest mountaineering difficulties, horses being taken to the very foot of the final peak. It is somewhat startling to read our author's descriptions of the rich grass on the lower slopes, and of splendid forests, of Alpine flowers and frequent patches of snow, of keen mountain air and of extensive mountain views, all recalling European experiences and rather unexpected in Australia. The party consisted of the author, of Mr. Cullen (of the Geological Survey of New South Wales), and of Spencer, a squatter commonly known as the 'King of the Mountains.' The date of the ascent was January 11, 1885. On the way back to Cooma the party narrowly escaped a sand storm, and were able to study the vast damage it caused, a space about 400 feet broad having been swept quite clear of trees during the passage of this terrible scourge.

In January 1886 Dr. von Lendenfeld explored the other great range of the Australian Alps, which lies in Victoria. This is the Bogong range, deriving its name from a special variety of night butterfly. Millions of these insects passed close to the party during the night they spent on the highest point (6,190 feet). The view was much finer than from the Kosciusco range, as Mount Bogong is an isolated peak. Much difficulty was experienced in forcing a way through the brushwood. It is characteristic of Australian mountaineering that the horses of the party were taken to the very summit of the peak. We learn that the mountains in Australia are, as a rule, hillocks rising out of vast elevated plateaux. In only a few cases—such as Müller's Peak (from one side), Mount Clarke, Mount Bogong, and Mount Feathertop—do the peaks rise up boldly. The views, therefore, are not very impressive, though very extensive. At a certain height the temperature of the air is very low. Indeed, when starting for his ascent on January 11, 1885, Dr. von Lendenfeld had to put on woollen mittens to protect himself, and his feet were numb with cold.

In these Alps the flora is rich but the fauna is scanty. There is nothing in any way resembling chamois or bouquetins, the place of which is taken by the 'Dingoes,' or wild dogs, and wild horses. No annoyance was felt from mosquitoes, though 20 varieties are known on the coast, imported from abroad. The nearly entire absence of lakes is

remarkable, that of Omeo being a splendid exception to the general rule. On the whole, despite the moderate height of the peaks they seem to present a far more Alpine appearance than one would have expected in Australia.

The author's main object in his journeys was to ascertain if there were any traces of a glacial period in Australia. He was remarkably successful and has established the fact beyond question. He or his companions found striated rocks, 'roches moutonnées,' erratic blocks, and even (in the Bogong range), at a height of about 8,000 feet, an old moraine 700 ft. broad, 3,250 ft. long, and 115 ft. high!! And this despite the very incomplete explorations yet made, for Dr. von Lendenfeld was the first man to visit the Australian Alps who had any practical acquaintance with the traces of ancient glaciers in Europe. Such a result is interesting and very important, while very unexpected. The author gives us a general map of S.E. Australia, and two special maps to illustrate his two journeys, each of the latter including an inset detailed map of the highest peaks. These maps strike one as rather sketchy and as having remarkably few names, peculiarities which are to be explained by the facts that, at least in the Kosciusco district, no previous maps existed, and that travellers and visitors are very few in number.

The whole narrative fills only 36 quarto pages, and is well worth reading by all who take an interest in mountains outside Europe.

PROCEEDINGS OF THE ALPINE CLUB.

THE Annual General Meeting was held in the Club Rooms on Tuesday, December 13, 1887, at 8.30 p.m. Mr. C. T. DENT (President) occupied the chair.

Capt. W. DE W. ABNEY, R.E., Dr. E. HOPKINSON, and Messrs. R. F. BALL, H. W. HENDERSON, A. HOPKINSON, C. HOPKINSON, F. C. MILLS, R. A. ROBERTSON, F. W. SAUNDERS, and H. H. WEST were balloted for and elected members of the Club.

On the motion of Professor BONNEY, seconded by Mr. HEATHCOTE, Mr. R. MELVILL BEACHCROFT and Mr. FELIX O. SCHUSTER were elected *nem. con.* members of the Committee for the ensuing year, in the places of Mr. F. E. BLACKSTONE and Dr. G. H. SAVAGE, who retire from the Committee by rotation.

On the motion of Mr. TUCKETT, seconded by Mr. WALKER, the President, Vice-Presidents, Honorary Secretary, and the other members of the Committee, being eligible for re-election, were re-elected *nem. con.*

The CHAIRMAN then called upon Mr. CHARLES PILKINGTON to read his paper on 'The Black Coolins, Skye.'

Mr. Pilkington's paper was illustrated by a number of his own water-colour sketches, by a large map constructed by himself, by a panorama and several fine water-colour drawings by Mr. A. Williams, and by two sketches lent by Mr. Blackstone. At its conclusion Mr. HORACE WALKER remarked that the scenery in Skye transcends the live-

liest fancy. There is excellent climbing everywhere; but the inns, though good, are badly situated. It is like mountaineering in the Mont Blanc district from Martigny; but the air is not Swiss air and the long walks home are tiring.

Mr. TUCKETT was interested in the scientific aspect of the paper, and raised a point of natural history with regard to the fauna of the island. Mr. Pilkington had observed that it frequently rained cats and dogs. Were the latter Skye terriers?

Mr. HEATHCOTE remarked on the incorrectness of the Ordnance map, and said that in the south of the island are to be seen glacier markings finer than any he knew of elsewhere.

After some further remarks by Sir JOHN RAMSAY, Mr. FRESHFIELD, and Mr. WILLINK,

The CHAIRMAN said they were all indebted to Mr. Pilkington for his admirable and amusing paper. He had given them a lesson in Gaelic, and had both opened up and closed a new mountain country. He would propose a hearty vote of thanks to the author of the paper, and to the artists who had illustrated it so fully. This was carried by acclamation, and Mr. PILKINGTON having briefly replied, the proceedings terminated.

The Annual Winter Dinner took place at Willis's Rooms on the evening of Wednesday, December 14, and was attended by 163 members and their friends.

The Exhibition of Alpine Paintings, Photographs, and Appliances was open during the same afternoon, and attracted a very large number of visitors. A detailed notice of the exhibition will be found on p. 461.

Errata in Last Number.

- Page 404, line 18, for 'c. July 15' read 'July 15.'
 " 406, " 12, " 'château' " 'chalet.'
 " 413 place lines 22-25 within brackets.
 " 417, line 27, for 'Sacol' read 'Sacoli.'

* * * As the next number of the Journal is the last of vol. xiii., and will contain the index to that volume, the Editor requests that all notes intended for insertion in it may be sent to him as soon as possible.

THE
ALPINE JOURNAL.

MAY 1888.

(No. 100.)

THE HUNDREDTH NUMBER OF THE
ALPINE JOURNAL.

BY C. T. DENT, PRESIDENT OF THE ALPINE CLUB.

IN these days it is not very difficult to find an excuse for the celebration of some form of centenary. Yet we feel that it would be affectation to pass by, without special notice, the publication of the hundredth number of the Alpine Journal. Indeed, the occasion should be one of legitimate pride to those who originated the Journal, and to those by whose efforts it has been maintained; in short, to all members alike of the Alpine Club. Twenty-five years ago (in March 1863) the first number was introduced in somewhat modest fashion. Little was predicted for the new venture, save that death from starvation was not an imminent probability. Such a mode of extinction is at least as unlikely now as it was then. Up to the present we have but partially worked out a few phases of the mountains, and the Alps are as many-sided in character as they are in architecture. As a matter of fact, the Alpine Journal, profiting by the occasional use of stimulants in the form of adverse criticism, has thriven and waxed fat; to such an extent, indeed, that an index to the

volumes published up to date—including ‘Peaks, Passes and Glaciers’—has become a paramount necessity. When this want has been supplied it will, we believe, be found that the *Alpine Journal*, so far as its subject matter is dealt with, constitutes the most trustworthy guide-book to the Alps and work of reference on general mountaineering exploration that exists in any language. That which is worth doing at all is worth doing thoroughly. Our history of the conquest of the Alps and the development of mountain craft was well worth doing: it is for others to judge how far the spirit of thoroughness has hitherto pervaded the work.

We look forward, yet cannot but look back also. In the earlier pages our readers will meet and recognise the touch of some vanished hands. May the *Journal* serve to keep green the memory of these old friends. In the later numbers all will, we hope, find an earnest of the loyal maintenance of handed down traditions. If this be not so it were a grievous fault.

To those by whose co-operation and support the *Journal* is maintained, it will not be out of place here to express our gratitude; that which is truly sincere and that also which, in a Rochefoucauldian significance, is but a lively sense of favours to come in the form of contributions.

CLIMBS IN THE CAUCASUS.

BY DOUGLAS W. FRESHFIELD.

(Read in part before the Alpine Club, February 7, 1888.)

'The power of attaching an interest to the most trifling or painful pursuits is one of the greatest happinesses of our nature.'—HAZLITT.

LAST year the Alpine Club was exhorted with all the weight of presidential authority to go to the Caucasus. It did not go. Do not think that I am about to repeat the invitation. Since I have been there again myself, since I have found how feasible, how delightful, and how healthful it is for hardy mountaineers to go for a two months' holiday to this new Playground, I feel, for my part, in no hurry to extend a general invitation to our own Unemployed, much less to the Alpine Clubs of Europe. Those bodies number over 50,000 members; they distribute an annual income of at least 20,000*l.* They do much for physical and historical research and cartography, something, I hope, to promote providence among guides; but they expend a large balance on what our neighbours, with their usual happiness, have termed 'the vulgarisation of summits.' By multiplying facilities for sleeping high and overcoming difficulties they succeed in bringing the noblest peaks within the reach of the meanest capacities, in filling the once peaceful solitudes of the High Alps with quarrelsome cockneys from all the capitals of Europe.

I can have no wish to subject the Caucasus to these, as I am old-fashioned enough to hold, malign influences. I like to think of those great far-away peaks waiting for their conquerors in their ancient tranquillity, solitary, unknown, almost nameless. I like to dream of glacier recesses which no eyes but the mountain goat's have ever seen, of 'star-neighbouring crests,' which since Æschylus wrote have had no new or nearer neighbours, of wide splendid landscapes which no tourist has ever gaped over, no handbook-maker has ever catalogued, no wordpainter has ever besmeared.

I have said that it is possible for hardy travellers to enjoy mountaineering in the Caucasus, and that is the honest conviction of a man who is not very robust or very young. I do not desire to ignore the other side. M. de Déchy thinks more of the difficulties; so he tells me do two young Germans whom I met at Kutais and who astonished that quiet town by starting in full Caucasian costume, bristling with weapons, for the mountains. One of these Doctors—M. de

Déchy adds—has since his return suffered from the hardships of Caucasian travel. I can easily believe it. Certainly the 'Times' was very far from the fact when it represented the Caucasus as offering to travellers the facilities of the Alps thirty years ago. It does not offer even the facilities of the Alps two hundred years ago, when Evelyn crossed them. For he found an innkeeper to quarrel with at Simplon, and an innkeeper's daughter to turn out of bed at Bouveret, with what disastrous result his Diary tells. In the mountains between Vladikafkaz Kislovodsk and Kutais there is not an inn or a bed to be found. A store of provisions must be taken, or the traveller may expect to go supperless as well as bedless, while he waits for the mutton which is still walking the mountains, or the loaves that are being baked in a distant hamlet. Travel, in short, is difficult, as Syrian travel is difficult, to those who depend entirely on the resources of the country. A Caucasian journey requires for its success a good deal of forethought, some sense of topography, and occasional energy and persistence. The mountaineer must depend more on his own judgment and less on his guides than in the Alps. He must not expect too much from others, but must be prepared in camp as well as on the mountains to bear his own share of hard work and responsibility. I have said enough probably to prevent a rush to the new Playground. I gladly leave generalities. My readers will frame their own conclusions from the story I am about to tell of my adventures above the snow-line. I will only ask them to note particularly two facts. In throwing *twice* over the main chain, once by an unknown pass, a heavy camp equipage we deliberately faced and overcame difficulties which need not necessarily be encountered. Again I arrived at Kutais on a Thursday night without having engaged either interpreter or horses. On the following Monday afternoon I was in Free Suanetia.

Urusbieh and the Adyrsu Pass.

The stars were shining brightly in a clear sky as on the night of July 23 last a solitary horseman pushed his weary animal up the track that mounts the valley of the Baksan. The moon was hidden behind the steep mountain-side, and the path where it crossed the rough bed of some stream was hard to trace, so that he was frequently forced to dismount. From time to time the dim shape and high bonnet of a Tartar horseman would loom in the darkness and disappear again with a grunt of passing salutation. The moon presently shone out on the shallows of the river, and the fires

of isolated farms gleamed on the farther side of the valley. Then the tramp of baggage horses and the voices of a considerable company rose above the sound of the torrent, and brought back the rider from memories of old days and comrades to the fatigues and discontents of the passing hour.

It was past 11 P.M. when our caravan dismounted to cross the bridge over the Baksan, and, scrambling over the scattered streams of the Kirtik, entered the village of Urusbieh (5,136 feet: R.S.). Considering the hour, we were speedily housed in the old guesthouse, which is not unlike a country cricketing shed. It was dilapidated but otherwise unchanged since I last lodged here nineteen years before.

It is, for obvious reasons, easy to get up in the Caucasus; and next morning I was out early. Dongussorun raised its broad snowy front against a cloudless sky at the head of the valley. I wandered up the steep hillside by the Kirtik path. Fine views opened through the Adyrsu opposite to the snows of the main chain. A noble cluster of pyramidal peaks, the highest of which is 13,314 feet, rose close at hand. They form the end of the range separating the Adyrsu and Adylsu glens, southern branches of the Baksan. Hard by were a small waterfall and a cluster of earth-pinnacles. The air was bright and dry, and the fatigues of the long journey from Vienna and the thirty-mile ride up from Atashkutan fell off from my limbs as if by magic. The villagers were collected in groups round the Kirtik bridge when I returned. An elderly Tartar stepped forward, grasped me warmly by the hand, and said amid general applause, 'Mingi-Tau, karasho.' His memory for faces was better than mine, but I rightly guessed him to be one of our Elbruz porters in 1868, glad to recall a fact the village has probably heard a good deal of in the last twenty years.

Later in the day the village blacksmith distinguished himself by welding on the head of a moveable ice-axe with great success. Meantime M. de Déchy, on whom in my ignorance of Russian the tiresome negotiations for transport necessarily devolved, was occupied in elaborate arrangements for the transport of our goods across the chain into Suanetia. The Tartars naturally wanted us to take one of the easier passes, the Dongussorun (the Nakra of my 'Central Caucasus') or the Betsho Pass. We were determined to try the Adyrsu. A very reasonable compromise was finally effected. Two donkey-loads of goods were sent across the Betsho Pass. Six porters consented to carry what remained over to Mestia by the Adyrsu. This conclusion was only

reached after a day's discussion. Early next morning the wrangle began again; this time it was the exact adjustment of the loads that was in question. A very argumentative Tartar produced scales, and weighed each man's pack with aggravating care. At last about noon, after an extra porter had been conceded, we were off. Steep zigzags brought us into the Adyrsu valley, and then for several hours we followed the foaming glacier stream through beautiful pine-woods overhung by snowy peaks from the hollows between which streamed frequent glaciers. The spurs of the main chain here are, like those of the Pennines, of great height. In the ridge E. of the Adyrsu, between it and the W. glen of Chegem, there are three summits of 13,584, 13,972, and 14,273 feet respectively; * the glaciers are extensive and the passes at their heads high. Both peaks and passes are, however, less steep than is usual in the Caucasus.

Grove has described the lower part of the Adyrsu in detail. After a steady ascent we reached a brow—not an old moraine but a natural spur—beyond which a broad level, devastated or choked with rubbish by the torrent, spread between steep hillsides fringed with pines and birch. At its further end, on the slope close to the glacier, rose the smoke of a shepherd's *kosh*, where our porters proposed to spend the night.

Here we pitched our tents in a grove of stunted birch trees. It was a pleasant situation. The evening was fine and we had time to enjoy it. The peak seen from Urusbieh stood due S., a broad wall with glaciers streaming from either flank. A bolder summit rose to the right; another glacier offering a noble pass to the Adyrsu, an expedition I recommended nineteen years ago and which remains unmade, lay at its northern base. There was a glacier exactly opposite offering a corresponding pass—part of the High Level Route of the future—to the Basilsu or western Chegem valley. M. de Déchy took many photographs of our camp and the surrounding scenery. Our Tartars, who once out of the village proved thoroughly good fellows, came and grouped themselves with great readiness, and then formed a circle round the shepherds' fire. As usual in the Caucasus there was no hut corresponding to the Alpine chalet. A low wall, a few sticks, and sheepskin cloaks sufficed for shelter. The sunset was glorious. The supper

* The figures are communicated to me from unpublished measurements of the Russian Staff by the courtesy of General Shdanow.

was satisfactory. The *kaimak* or Devonshire cream mixed with marmalade was more than good: much too good for the guides, who were all more or less ill next day. It is no use trying to feed Alpine peasants on preserved meats or delicacies. They swallow without discrimination; they will devour a *pâté* with the remark, 'On peut le manger.' Soups—the simplest kind made in Germany—and cold mutton are the diet that agrees best with them. In the second part of my tour I made my men much happier by always having mutton in cut.

We slept so well that the first sound we heard was the good-humoured 'Pajom; skorei' of the porters. 'Pack up; be off,' I believe, it may be roughly translated.

By 5 A.M. we were on the march straight up the glacier on whose verge we had camped. It would have been shorter to follow the grass-slopes on its right bank, and by camping on the top of this grass-slope active travellers may reach Mestia in one day from the northern side of the chain. M. de Déchy and I walked ahead up the gently rising ice, passing a fine waterfall which bursts from an upper snow plateau W. of the peak which, as it dominates the whole valley, I shall call the Adyrsu Tau. From this plateau there is undoubtedly a pass to Mestia more direct than that we crossed. Our porters had a tradition of it, and I fancy a name for it, 'Gorvatsh Tau.' Tau is used at Urusbieh for a mountain crest, including both peaks and passes—just as *Tauern* is in central Tyrol.

'The porters are asking how the grey old man will get over the mountain?' said M. de Déchy. I replied nothing, but presently when we came to slippery snow-slopes and a chimney between ice and rock I gave a practical answer which more than satisfied all my companions that I could still walk uphill at a fair pace. On the highest rocks (marked by a small stoneman) on the verge of the vast upper snow-field I waited for the caravan and enjoyed the wide panorama of strange snows. The two peaks of Elbruz already loomed high above the intervening crests. We were in the centre of a wide basin of shining glaciers. Our pass lay S.W., so that here we bent back from the general S.E. direction of the glacier we had ascended.

If the snow had been good the walk on to the Col would have been nothing. But last year the snow never was good in the Caucasus, probably owing to the very heavy falls in the late spring. We sank in over our ankles all the way. The heavily-laden porters ploughed along manfully. The

last slope was steep, but the névé was little crevassed. The Col was broad and we walked several hundred yards beyond it to the edge of the descent before halting.*

The view to the south and west was astonishing. The topography of the ranges roughly resembled that of the Savoy side of the Col du Géant. We were face to face with a great spur, answering to the Chamonix Aiguilles, which enclosed the basin of an enormous glacier. This secondary chain was higher than the watershed, extraordinarily steep, in part covered with hanging glaciers, in part cased in delicately fluted sheets of snow. It ended to the W. in a bold rockpeak, beyond which showed in the distance the long icy rampart of the Leila range. As we descended, avoiding ice-falls by steep beds of avalanche snow, Tetnuld and Gestola raised their snowy horns over a broad white gap leading apparently to the Thuber Glacier. When we gained the main and comparatively level glacier Ushba came into view for the first time. Its two huge massive peaks, too steep for any snow-field to rest on, towered high over the nearer crest of the mountain that has been called Little Ushba. The glacier was of great size, and abounded in icetables and all the features of Swiss icefields. The shelves on the steep crags to the N. were quite green, a pasturage for mountain goats, for which our porters kept a keen lookout. A broad icefall poured down from the main chain on our right, leading no doubt to the Gorvatsh Pass. Another great glacier, flowing from a basin at least as large as that of the Talèfre, met ours. At its head is a pass from the Adylsu known to the natives.

Above the junction we left the ice for slopes covered with dwarf white rhododendrons still in bloom and a hundred flowers—yellow poppies, white anemones, forget-me-nots, and many strange species. At the angle where the united streams turned to flow nearly due south through a steep-sided trench we found traces of a hunter's sleeping-place, but still there was no kind of path. The porters thought they saw wild-goats, and did a little stalking with no result. The rocks became too steep and we had to return to the ice, or rather to the moraine, which was of the exasperating

* The height by mercurial barometer is about 12,200 feet. A pass at the head of the Adylsu is marked among the heights sent me by General Shdanow, 'Mestia Pass, 12,012 feet.' I have not been able to satisfy myself as yet whether it is identical with our Col or the Gorvatsh Tau.



character of moraines in all countries. I did not leave the ice again soon enough, and had a horrid scramble across a very steep gritty slope, rewarded at last by reaching a bank of brushwood and flowers, down which a little track meandered. Here were the first wild roses, the tall yellow Caucasian lily, and a variety of beautiful blossoms I wish I could name.* Our track was interrupted by a deep gorge down which poured a stream from a hidden glacier on the left. To avoid a climb and circuit we returned to the main glacier and thus regained the path beyond the side glen. The end of our great icestream was at last in view. The sun was already setting. I ran along the path through the first thickets; after half a mile I came on the first spot suitable for a camp, where an old moraine now overgrown and several hundred feet above the ice formed between itself and the slope a convenient dell. Water was at hand, and with darkness so near we were glad to pitch at once the Whympers' tents and light our fire. The porters cut several armfuls of bushes and grass, strewed them on the ground, wrapped themselves in their *bourcas*, and fell in a heap. We cooked a good meal and made ourselves comfortable for the night with rugs and air cushions. I was awakened before dawn by a sharp pattering on the canvas; a heavy shower was falling, and the porters had withdrawn to a neighbouring pinegrove where a bright fire threw a picturesque gleam between the dark trees.

The morning was fine, and Ushba was magnificently seen at the head of a side valley filled by another great glacier, which had in comparatively recent times met ours at the junction of two valleys. It now descended nearly to the junction and terminated some 200 feet lower than the Gvalda Glacier. This further descent is attributable not to its larger mass but to the greater steepness of its course, which gives the ice a higher velocity—if velocity is the right word to use of a glacier. This glacier—the Ushba Glacier I propose to call it—is fed from two great reservoirs; one lies between Little Ushba, the N. peak of Ushba, and the peak (Gulba) I subsequently climbed; the other feeder flows from the main chain N. of Little Ushba. The pass at its head leading to the Shichildi Glacier is known to the natives, but is said to be difficult. It does not look so. The

* Botanists may be referred to Dr. Radde's 'Vier Vorträge über den Kaukasus,' in *Ergänzungsheft No. 36 of Petermann's Mitteilungen*. See also Dr. Radde's lists reprinted in my *Central Caucasus*, pp. 502–9.

glaciers end at a height little over 5,500 feet, and are, I believe, the lowest in the Caucasus.

A short run brought us to the water, and then a level path led through copses rich in wild roses and ripe strawberries amidst scenery that softened as we advanced. Near the first cluster of houses, surrounding a ruined tower, we learnt that a bridge was broken, and we must remain on the left bank. This was fortunate, for we were led across sloping hay meadows fringed with copses and broken by deep dells in which grew gigantic weeds and flowers. The peaks of Ushba, seldom out of sight in Suanetia, appeared again over the lower heights, and the long line of glaciers of the Leila chain made a fine background to the seventy white towers of Mestia (4,600 feet: Déchy), which rose among fruittrees and barleyfields beyond the broad bed of the torrent, just above its junction with the stream from the Mushalaliz.

'Savage Suanetia,' the title of Mr. Phillipps-Wolley's recent book, although in one sense appropriate, is, so far as nature is concerned, singularly unhappy. Smiling—sylvan; such are the epithets that come naturally to the traveller's lips as he suddenly emerges from the icy recesses of the Caucasus into a region of wooded hills, gentle slopes, sunny meadows, and neatly-fenced barleyfields. Compared to the warrens or stoneheaps which serve the Tartars of the northern valleys for dwellings, even the towered villages have at a distance a false air of civilisation. North of the chain the traveller is frequently reminded of the sterner valleys of the Pennine Alps, or even of Dauphiné. Here the hillshapes recall Savoy—Contamines and Mégève; the forests show softer and more varied foliage than we are accustomed to in the High Alps; the pines—and what pines!—no longer predominate, but appear as dark cones of shadow amidst the fresh green of early summer, of beeches and alders, of copses that a few weeks earlier must have been ablaze and fragrant with blossom. Suanetia in June, in the flowertime of the rhododendrons and the azaleas, and again in October, when the azalea leaves are red and the birches golden against fresh autumn snows, must be one of the wonders of the world. But at all seasons its prospects will please wanderers with any feeling for noble mountain scenery.

Spaciousness, sunniness, variety are the constant qualities of Suanetian landscapes. The great basin of the Ingur, forty miles long by ten to fifteen broad, is broken by no ridges that approach the snow-line, and the long undulating

grassy or forested spurs that divide the glens, in place of narrowing the horizon, furnish in their soft lines the most effective contrast possible to the icy peaks and rigid precipices of Shkara and Tetnuld, of Ushba and the Leila. From the varied beauty of forests and flowers the eyes are carried at once to the pure glaciers, which hang like silver stairs on the green slopes of the snowy chain. The atmosphere has none of the harshness of that of Switzerland in summer. The breezes from the Black Sea bring up showers and moisture to soften the outlines and colour the distances; the wind from the Steppe suffuses the air with an impalpable haze, through which the great peaks glimmer like golden pillars of the dawn.

Ascent of Gulba.

I must refer to my Diary for the details of our stay at Mestia, and ride to Betsho* (4,200 feet: Déchy).

On the first day of our stay there the weather was unsettled, and M. de Déchy was disposed to attend to his photographic apparatus and other details. Accordingly I started at 5 A.M. with Michel Dévouassoud and François's nephew for an excursion towards Ushba. It is an hour's walk across meadows to Mazer, where the Gul glen, which leads straight up to the small glacier flowing from the S.E. base of Ushba, falls into the main valley. We tried a short cut at the angle, with the result usual in Suanetia; we got into an impenetrable thicket of hazels and azaleas. After this we boldly asked our way at the first cottage to the 'lednik' (Russian for glacier), and to our great surprise were understood and pointed out the track. There is a good horsepath right up to the glacier, and the Russian officer at Betsho sends up in summer sometimes for a load of ice. We mounted slowly through a fir forest, then across a flowery pasturage. The clouds played in and out between the two great peaks. Towards noon they lifted. By this time we were level with the middle region of the glacier, and it became necessary to decide how far our reconnaissance should be pushed. Since the weather now promised a few fine hours, I set my mind on gaining the top of the rockpeak opposite Ushba, at the E. end of the semicircle of crags that surround the head of the Gul Glacier. Here it was only the footstool of Ushba, but anywhere else it might have passed for a respectable peak.

The glacier pours down in a short icefall from the recess

* See p. 358.

between this summit—Gulba, I propose to name it—and the two great towers. Now we were at their very base they did not look so appalling as might have been expected—not worse than the Cimon della Pala, and certainly not so formidable as the Meije. The long snow-slope between the summits might be found in a perfectly safe and easy condition, and in that case difficulty would not begin till near its head, where there is a curtain, like the Tschierva Sattel on a larger scale, connecting the two peaks. The rocks of the S.W. peak are tough at the top, and probably cannot be climbed from the gap between the peaks. They should be taken lower down. The N.E. peak is easy, when the line of cliffs that runs round it some 300 to 600 feet below the summit has been passed. It is probably the higher, but by a very few feet. Under favourable conditions, starting from a bivouac near the foot of the glacier, I should expect to succeed in the ascent.

The conditions in which we found the mountain were the reverse of favourable. I have never in the Alps heard a glacier keep up for several hours a perpetual hissing. In the warm midday sunshine the whole upper slopes were peeling of their surface snow. It was not falling in masses, but gliding gently downwards with a soft ominous sound. When by climbing some broken banks of rocks we had reached the level of the top of the icefall we found it all we could do to plough up the first slopes of névé; the snow gave way at every step under our feet. The rocks close at hand were steep, but our best chance was clearly to grapple with them. We found a shelf by the help of which, with some hard scrambling and more labour of arms than legs, we gained the western shoulder of our little mountain. The Gul Glacier flowed in part from a snowy recess behind this shoulder. Beyond this snow at a distance of a few hundred yards ran a range of bold rocky pinnacles, separating us from the basin of the Ushba Glacier. The rocks we had to climb were probably not so difficult as those leading up to the Schreckhorn Sattel, but they seemed to me more so, partly perhaps owing to the quantity of ice and snow about and also to the number of loose boulders. Latterday climbers can hardly realise how great a service has been done them by those who have gone before in clearing their paths of such treachery. From the point where we first looked directly down on to the Ushba Glacier the mountain narrowed to a thin comb. A nasty gully full of ice separated the first top from the highest point. I insisted on going on, and we got across without much delay, and in three hours from the lower glacier were

enthroned or 'enfootstooled' on our peak. Seen from Betsho it looks blunt and stumpy; on the top one finds that the mountain has no thickness, is in fact little more than an Aiguille. The cliff on the E. is as perpendicular as a mountain well can be, and stones sent down it to the Ushba Glacier progressed by very suggestive leaps and bounds. In photographs taken from the Mujalaliz this side of the mountain shows as a sheer precipice.

animi causâ devolvere rupem
Avulsam scopulo placet, ac audire sonantem
Haud secus ac tonitru, scopulis dum immurmurat altis.

writes an old Swiss Latinist.* But when we had cleared a solid space to sit on we had something better to do than imitate this classical frivolity. Gulba may be a little peak, but it is a great view-point. Happily the clouds had lifted, as they do sometimes before a storm, and nothing was hidden except the high peaks of the central group, Tetnuld and its farther neighbours. Full in front, not a mile off towered the vast bulk of Ushba, its twin peaks rising at least 3,500 feet above our heads. Turning northwards, we looked across one of the reservoirs of the Ushba Glacier to a ridge crowned by a symmetrical snow-pinnacle (Shichildi Tau), conspicuous from the Shichildi Glacier, north of the chain, and the massive rockpeak named Little Ushba. Almost at our feet lay the meeting-point of the Ushba and Gvalda Glaciers and our camping ground after the Adyrsu Pass. The great basin of the Gvalda Glacier and the ridges round it were spread out as on a map. None of these peaks appeared to exceed 14,000 feet.† Our own height I estimated (the aneroid had unfortunately been left behind) at 12,000 to 12,500 feet. Continuing the panorama we saw, under the clouds, the glaciers of the central group, and below them all Free Suanetia, spread out like a model, a maze of low ridges and deep glens—heights clothed in green forests, hollows where the shafts of sunshine played on yellowing barleyfields and towered villages and white torrent-beds. The long chain of the Leila lifted its glaciers against the southern sky as the Grand Paradis does seen from the Becca di Nona. Beyond the Ingur, towards Abkhasia, we saw far away another outlying snowy crest. And then the eyes rested on the lofty jagged ridge which forms from Betsho a foreground to

* Rhellicani Stockhornias, A.D. 1536.

† The measurements of the Russian Staff kindly communicated to me by General Shdanow confirm this impression. I am convinced that neither Ushba nor Little Ushba are actually on the watershed.

Ushba. We only got to the top at 3 P.M., but despite the guides' impatience and the stormclouds gathering over the Black Sea I insisted on remaining the best part of an hour on the pinnacle.

The first part of the descent required care. The loose stones were particularly troublesome. But as soon as it seemed to me safe I gave the order to try the snow. The slopes were neither crevassed nor steep enough to make the tendency of their surface to slide any hindrance in the descent, and we rode down in fifteen minutes on a succession of artificial avalanches a height we had taken two hours to climb by the rocks.

When the rope had been taken off I left the guides to follow at their leisure, and set off at my best pace for the valley. The thunderclouds had now enveloped the great peaks, and it seemed only a question of minutes when they should break.

I halted for a few minutes on the way down at the camp of Prince Wittgenstein and Prince Shervashidzi, the former a Russian officer who has held high posts in Central Asia and talks excellent English, the latter of an ex-princely native family. Their camp was interesting as a specimen of old native habits in travel. Four solid tree-stems had been stuck into the ground, and crossbeams nailed to them to support walls and a roof. On this simple framework boughs were being dexterously interwoven by a crowd of camp-followers. In settled weather life in such an arbour must be agreeable, and even on a rainy day the owner of a *bourca* can afford to despise a perpetual dripping. Bright Persian rugs and saddlebags were spread on the ground and gave colour to the scene. What success the princes met with in their search for gold I never heard. Jason's fleece is said to have been gilt in the streams of the Ingur: at any rate other fleeces in historical times have been placed in its stream to catch the precious particles.

Four hours after leaving the top of Gulba I pushed open the door of the Courthouse at Betsho, where we had three bare clean rooms at our disposal. Any party provided with their own hired horses, campbeds and furniture might make themselves very comfortable here, since the Priestav kindly supplies many necessaries, including bread and wine. It should be remembered, however, that an officer in so remote a post finds hospitality in every sense a strain on his resources, and means should be found to make some adequate return for the services so generously rendered to all comers.

Suanetia as a Mountaineering Centre.

I shall print elsewhere a sketch of the aspects of Suanetia which may interest the historical student or general traveller.* Here I pause only for a minute to point out the advantages it offers as a base for mountaineers. It will be seen by a glance at any good map that the villages are much nearer the snows than those on the north side. Their situations are also more picturesque. Taking them from W. to E., though there are no doubt many expeditions to be made from the lower villages, Betsho (4,200 feet) is the first good centre. The Russian Courthouse and Priestav's residence lie in an open level valley running N. and S. at the base of the towers of Ushba. Those great peaks can and will be climbed. Their tour can be made by glacier passes known to the natives. From the head of the valley (obliterated in the five-verst map, which is here worse than useless) the Betsho Pass (11,642 feet: Déchy) offers a known route to Elbruz and Urusbieh. Dongussorun (14,592: R.S.) may be climbed, a pass over a high southern spur made into the Nakra Valley. The highest peak of the Leila offers itself to the first comer. The ascent would be beautiful, interesting, and, topographically, most instructive. The surrounding ridges offer a large choice of grass walks, exquisite forest scenery, and views of snowy peaks. Or an idle day may be spent on a haycock on the verge of some fresh-mown glade, ringed by groves where the last azalea is hardly out of blossom and the lilies and lupins that have escaped the scythe still brighten the borders of the wood, until the sunset fades off the crests of Ushba and Tetnuld, and the stars and the fireflies come out. There is nothing to be feared now from the inhabitants. I at least wandered often alone, and (except at Adish) met with nothing but courteous salutations.

What the traveller needs in Suanetia in order to be comfortable is an air mattress and provisions enough to furnish him with a meal on first arrival in new quarters. At Betsho excellent Russian brown bread is forthcoming, which keeps many days. Wine also can be procured in some of the villages. Sugar and tea must be carried. In short, the

* In *Proceedings of the R. G. S.*, June 1888. See also Dr. Radde's *Drei Langenhochthäler Suanetiens*, Freshfield's *Central Caucasus*, Telfer's *Crimea and Caucasus*, Phillipps-Wolley's *Savage Suanetia*, Iljin's *Ushba* (in *Petermann's Mitteilungen*, 1884), Bernoville's *Souanétie Libre*, and M. de Déchy's *Svanétie Libre*, 1886.

traveller should provide himself with a competent interpreter, his own hired horses, and a light camp equipment.

Mestia—where there is a government shed, or Cancellaria—is the next halting-place. The situation is beautiful. Hence Little Ushba might be tried by the N. branch of the Ushba Glacier and a fine pass made by the Gvalda and Thuber Glaciers to Mujal (5,250 feet: D.). At that village the priest's house is clean and cheerful. From it Tetnuld can be climbed and the Zanner Glacier and its peaks explored. Adish will probably treat travellers with more respect after the lesson it learnt last year. Still I would not use it for headquarters. The people absolutely declined to serve us as porters. I should camp at the head of the Kal glen in order to reach the ridge between Djanga and Shkara, which is guarded by a formidable snow-wall, or to force the Adish icefall by the rocks or its (true) left and so gain Gestola or Djanga from this side.

The little loghut at Kal is in a lovely situation, but too far from the snows for glacier expeditions. The people at Chubiani (Ushkul, 7,100 feet) were very civil: but of course all our comfort was due to the Kutais schoolmaster, Busarion Nichoradse, whom we had the luck to meet there. Mountaineers should climb the crest of the chain where the watershed between the Skenes Skali and Ingur abuts on it. The slope down to the Dychsu Glacier on the N. side is, I know, steep. But a pass here would, if practicable, be an important discovery. A beautiful walk may be enjoyed by crossing the Naksagar and returning by the grasspass close under the snows, descending to the lovely alp and tiny tarn above the sources of the Ingur. The snow mountain, part of the Dadiasch (10,243 feet: R.S.), at the source of the Quirishi, south of the Naksagar Pass, is easy and panoramic. François best described it as 'tout-à-fait le Buet de ce pays.'

On a delicate matter I will venture a few words of advice. Do not strain too far the hospitable traditions either of government officials or natives. If I went again I should often say, as I did once or twice last year, 'You have, I know, a noble habit of hospitality; but Englishmen also have a custom, that of paying just prices when they travel; extend your courtesy so far as to allow my custom to prevail.' I feel convinced that such a speech will be very seldom resented, and will often lead to the speedy production of resources, the existence of which the guest who does not open his pursestrings might never have suspected, and at any rate would have taken long to discover.

The Ascent of Tetruld.

If the state of the snow rendered, to the best of my judgment, an attack on Ushba a doubtful and dangerous adventure, I was determined not to leave the south side without doing my best to climb Tetruld, the noble mountain whose silver spear had in 1868 gleamed down on me first of all the Caucasian snows as I steamed up the Rion.

Next to Kazbek and Elbruz, Ushba and Tetruld are at this moment the best known peaks of the Caucasus, eclipsing in popular reputation, in consequence of their being so much more easily seen from the valleys at their base, Dychtau and Koshtantau. Tetruld, owing to its slender pyramidal form, attracted attention very early from Caucasian travellers. Dubois de Montpéroux took it, on account of its conelike appearance, for a volcano, which it is not really in the least like. Mons. E. Favre speaks of it as 'the gigantic pyramid of Tetruld.' Herr von Thielmann in his description of the view from the Latpar Pass, writes, 'Tetruld, the most beautiful of all the mountains of the Caucasus, stands out from the chain in the form of a gigantic pyramid of the height of 16,000 feet. The dazzling whiteness of its snowy mantle, combined with the grace of its form, produce an impression similar to that created by the Jungfrau, while to complete the comparison a conical peak, smaller but equally beautiful, like the Swiss Silberhorn, rises up at its side.'*

My Diary has told in a summary manner how, owing to the naughtiness of the men of Adish and the crossness of the weather, we were driven back in our first attempt to approach Tetruld by way of the ridge behind Adish.

One of the first evenings in August found us comfortably installed as guests in the priest's house at Mujal. Comfortably I have written, and I mean it. The priests in Suanetia are not native to the soil. The Free Suanetians proceeded long ago from disestablishment to disendowment, from disendowment to an agnosticism which was very like paganism. They had got rid of priests altogether, and were in such a state of ungodliness that the Russians could think of nothing better than to baptize them first and send them priests

* The second peak is the more distant Gestola. I may add that Von Thielmann's identification of Elbruz is, I feel certain, erroneous. The snowy-sided peak he describes is Dongussorun. Only the topmost crest of Elbruz is visible over the N.E. shoulder of Ushba. The translation of this passage in the English edition is execrable.

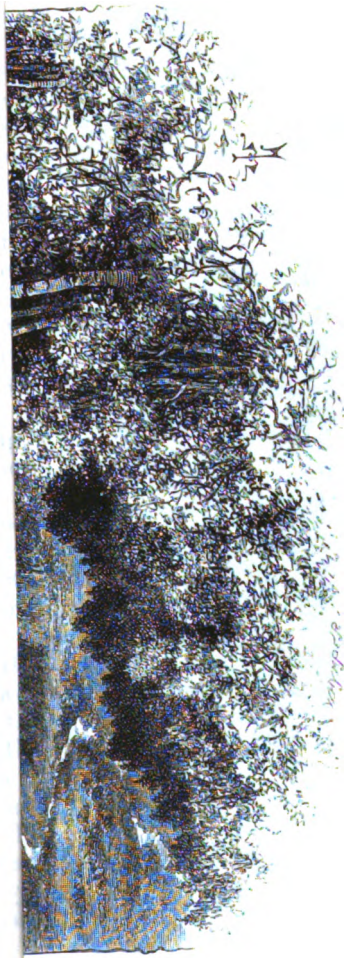
afterwards. The priest of Mujal has built a house in civilised style with a broad balcony on the first floor running round two good clean rooms, which he can, when he chooses, make very liveable.

The village is one of a group lying on the left bank of the stream about a mile below the junction of the torrents from the Thuber and the Zanner Glaciers, in an open basin of barley-fields enclosed by wooded slopes. Beyond the river the white towers of Mulach break the hillside, and high in the air the mightier towers of Ushba show between the rain-storms their vigorous outline. Tetnuld is hidden by its spurs, and at the head of the valley only the white snout of the Zanner Glacier is seen beyond the dark cliffs and forests of a deep gorge.

On the first day of our stay I made a false start for Tetnuld with two of the guides. In the middle of the gorge we lost the track, struggled through dripping thickets, and were finally brought to a halt by the difficulties of the ground and a drenching rainstorm. Under a noble pine no rain could pierce we lighted a blazing fire and waited till it was time to return to the village.

The second day was too bad for mountaineering to be thought of. But we had plenty of entertainment at hand. First there was the arrival of the Russian forces to avenge the Rape of the Shirts. They consisted of a splendid old Cossack sergeant—quite the popular ideal of a Cossack—and his two men, a mild broadfaced Russian youth and a weak Suanetian. This trio marched on Adish, and very much to our surprise and their credit successfully arrested the ten leading villagers.

Another arrival was promised us. No less a person than the Bishop of Poti, the first Bishop who in historical times had penetrated Free Suanetia. From so fever-stricken a see one might have looked for a pale ascetic; our prelate however was much the reverse—a man of sturdy frame and sense. But I am anticipating. It was towards evening before the path that descends the beautiful slopes above the village became alive with horses. The cavalcade was divided into many detachments, camp-servants with huge saddlebags, long-haired priests, singing-men with dark locks and melancholy staglike eyes. Last came the Bishop himself, a large thickset man in imposing ecclesiastical vestments, attended by his secretary and a Mingrelian gentleman who talked French and had spent some time at Geneva. Through the latter I had some talk with the Bishop, who told me that



USHBA.

From a Photograph by M. DE DICKEY.

the first sermon he preached to the Suanetians would be on the necessity of giving up their eclectic practice of keeping the holy days of three religions and doing no work between Thursday night and Monday morning!

The supper that evening showed the resources of Suanetia! We all, except the Bishop, sat down to it, a company of at least thirty. The first course consisted of excellent cream-cheeses. Roast mutton, boiled fowls, roast pig followed. Knives fell short and plates shorter. But the baser sort at the lower end of the table used their *kinshals* (daggers) for knives, and the flat loaves—excellently baked for once in the bishop's honour—served as plates first and were eaten afterwards—after the fashion of Æneas. And then there was wine at discretion—capital sound Mingrelian wine, which no one but the guides despised. It was long past midnight when I retired between the folds of Tuckett's insect-proof bed, watched by a solemn group of long-robed priests and peasants very much resembling the bystanders represented in the Raphael Cartoons.

The sky next morning was less charged with vapour, and there was a touch of north in the wind. I was determined to start again for Tetnuld. M. de Déchy was anxious not to lose the advantage of the expected visit of the Priestav from Betsho in making final arrangements with the villagers to serve as porters, or the chance of any days of settled weather to cross the chain. Had we been content to take the Thuber Pass (11,815 feet: Déchy), crossed two years before by my companion, there would have been comparatively little difficulty. That is the ordinary route from Suanetia to the Tartar valleys E. of the Baksan. It must be remembered that we were calling on the villagers to reopen a pass of which nothing but a tradition survived, and which one man only in the valley pretended ever to have crossed. Had anyone a hundred years ago tried to make the men of Grindelwald cross their glaciers to the Valais he would certainly have met with considerable difficulty, and M. de Déchy deserves the highest credit for his patience and pertinacity in overcoming the very natural unwillingness of the men of Mujal for the adventure we forced upon them.

It was agreed between M. de Déchy and myself as follows:—I should set off at once with the three Chamoniards, bivouac high, and attempt Tetnuld by the glacier which flows down from its peak to meet the Zanner. Twenty-four hours later M. de Déchy should start with our Cossack, the native porters and all the baggage and pitch our tents

beside the Zanner Glacier, where I should endeavour to join him at night. Should I fail to do so we would each do our best by lighting fires to give intelligence of our safety and our whereabouts, and I and the guides would press on next morning until we caught up the Heavy Brigade on the ascent to the pass. As we had neither of us ever seen the great glaciers leading to the peak and pass, the scheme was, I flatter myself, bold as well as ingenious. As far as topography is concerned, it may fairly be compared to a proposal to climb the Schreckhorn and meet again at the Zäsenberg, or on the way to the Mönch Joch—no one having previously been as far as the Eismeer for a quarter of a century.

Warned by experience, I took the precaution to hire a native to show us through the gorge. Crossing the torrent just above the junction of the Thuber water, we found an old track of the faintest kind, which after a time failed us altogether. It was warm and moist among the dripping flowers and foliage; the guides were the reverse of exhilarated, and the chances of success for a time did not seem very brilliant.

The ice eighteen years ago—as may be seen by the photographs taken by Count Levershoff's expedition in 1869—poured over a steep cliff on the top of which it now lies, ending therefore at least three or four hundred feet higher than when Abich measured it at 6,612 feet. A rough scramble brought us to the edge of a hillside it had scraped bare. Pushing aside the hazel-branches I got the first view up the southern glacier—the Tetnuld Glacier I shall call it—to the peak. Our route was plain; it was the one I had marked out on one of the 1869 photographs before leaving England. Given fine weather and no ice on the final ridge, Tetnuld could hardly escape me.

In the foreground at the foot of a rocky spur of the mountain two great glaciers met. On the left the Zanner tumbled over from its unseen reservoirs in an impassable icefall. On our right the Tetnuld Glacier fell first in a great broken slope of névé, then in a long icefall, at last in a gentle slope, until it joined its stream to that of the Zanner. We descended on to the ice, and then mounted the Tetnuld Glacier for a certain distance until the crevasses made it convenient to cross the moraine and enter the hollow between the ice and rocks on its right bank. This was partly occupied with beds of avalanche snow, alternating with flowery slopes. On the last of these, at a height of less than 9,000 feet, we determined to spend the night. An overhanging

rock offered good shelter, and there were all the requisites for a luxurious bivouac; rhododendron stalks and roots for a fire, flowery grass for beds, water. It was not high enough; but the ground above was easy and it seemed better to start early than to freeze higher up. We had two sleeping-bags, sufficient wraps, and provisions for two days, so that the guides were sufficiently loaded. The space under the rock was soon levelled, stones thrown out, and a flooring of elastic twigs and grass laid down. Then we piled up a blazing fire, toasted Suanetian loaves, and watched with satisfaction the last clouds melt into the sky and the peaks of Ushba stand out against a golden sunset.

I felt very comfortable in my sleeping-bag, and was soon asleep. I was awakened by a sudden sense of light. The moon had scaled the high walls of the crag to the east. I could see the time by my watch by it; it was 12.30 A.M. I rolled myself out from under the boulder, set a light to the spirits in one of those admirable inventions 'Silver's Self-cooking Souptins,' and roused up the guides. In a quarter of an hour we had laced our boots, shared our soup, and shouldered the light packs containing the day's food.

The rough ground beside the glacier afforded for some distance easy walking. The shadows of the crags diminished as the moonshine flowed down the snowy avalanche tracks between them. But presently the cliffs and glacier met, and it became necessary to take to the ice. Our first attempt to pass the marginal crevasses failed, owing to the uncertainty of the light. But at the second we gained easily the middle of the glacier above its lower icefall. It was still some way to the foot of the great bank of séracs. Snow already covered the surface and the rope had to be adjusted. I had noticed the day before that to the S. (right in ascending) of an isolated mass of rock there was an almost unbroken slope. But François, in the old Chamonix spirit always ready to tackle crevasses, saw no reason for going out of our way.

It was still night, the sky above was deep blue, and spangled with innumerable stars except in the immediate neighbourhood of the moon. The white snowfields and green vaults round us seemed to emit an unearthly light. We wandered in and out until the chasms thickened and drove us far to the right. We were lost sometimes among the white undulations; a bridge failed us and we had to retrace our steps. At last we dashed at a great broken snowpit, and scaling its sides by the help of crevasses choked with the fragments

that had fallen from their own walls, raised ourselves on to the lower edge of a broad plateau.

The peak, hitherto hidden, was now before us, a coronet of stars fading away round its crest. A glimmer of dawn played over its southern shoulder and rested on something large and white far to the west—Elbruz. Soon the sky grew paler and shafts of light shot across it; they touched Elbruz and Ushba and turned their snows first red, then gold. The lesser heights above the Thuber and Gvalda Glaciers caught the sun and the upper world was awake: though the lower hills and hollows of Mingrelia and the seaplains still waited in darkness.

Under the topmost cliffs of Tetnuld lay a white terrace sloping up towards its southern ridge. To gain this terrace another long slope of séracs had to be climbed. A way through them was easily found. On the terrace above the snow began to be very soft and powdery, and the distance to be traversed was considerable. François suggested a dash at the W. ridge, which was close above us. The way, if there was one, lay up steep rocks and snow. If there was ice enough to mean step-cutting the slopes would have been endless, if soft snow on ice extremely dangerous. I did not think the chance of their being in good condition sufficient to justify the attempt, and we adhered to my original line of ascent.

A steep bank of ice intersected by crevasses had to be climbed. The loose snow on it was scraped off and good steps made for the descent. Above it there was a last level from which an ascent of a few feet over a bergschrund and up a steep bank brought us at last at 9 A.M., in 8 hrs. from our bivouac, to the longed-for ridge. It had been cold in the shadow, so cold that Michel Dévouassoud suffered for his neglect of my instructions to bring well-seasoned boots to the Caucasus by being severely frostbitten. It is no use blinking the defects of guides as travellers, and one is their inability to realise how much in a distant journey depends on care and forethought in details; for instance, that a tight boot may be fatal to a campaign. I, wearing easy boots and two pairs of socks, was, despite a slow circulation, perfectly comfortable the whole day. Michel however did not feel his misfortune till night, and there was nothing to temper the satisfaction with which we broke into the sunshine and sat down on the little platform above the cornice.

In one moment the upper glens of Suanetia and the sources of the Ingur burst on us. The towers and meadows of Adish lay at our feet. The secret cradle of its great glacier

was all revealed. We looked right up the névé lying in a recess between Tetnuld and Djanga and the rockpeak N. of the Djkumer Pass—the Adish peak of previous travellers. Beyond it the crest of Shkara raised its long white curves against the dark blue sky.

Here we made our first serious halt and meal. Henceforth our path lay along the ridge. It looked inviting; fairly broad, not too steep, and with no uncomfortable shimmer of ice. But it was long, and the softness of the snow made it longer. At every step the leader sank over his ankles. Consequently leading was exhausting, and we had frequently to change. From time to time there was a little variety, a narrowing of the ridge which made it convenient, after careful inspection, to trust to the flat top of a substantial cornice—or a sudden steep rise which forced us to zigzag and hold on to our iceaxes. The hours passed; but there was too much to look at on our airy edge for the time to seem long. First of all there was the sensation of looking down. A few steep white curves and then, between our boots, we looked on green hills and meadows 8,000 feet below. Just such a view one has on the top of the Wetterhorn. Close at hand were our gigantic neighbours, the snowpeaks of the central group. To the west Elbruz loomed higher and higher as we mounted, and all the lesser heights bowed before the great white throne. But ever in front rose a new frozen bank. I looked across to the western ridge, and a point I had marked on it was below us. ‘*Nous approchons,*’ I said to François. ‘*Nous arriverons assez,*’ he replied cheerfully. The aneroid was marking 16,500 feet. The snow got thin and some steps were cut, then it held again. There seemed to be less bulk in our peak, little but air round us. Ten minutes more and a white cone cut the sky, it flattened at our feet, our eyes overlooked it. I ran on a few level yards, there was nothing more; two ridges fell steeply from my feet. Tetnuld was conquered. It was 1.15 P.M.; we had been four hours on the last 1,700 feet of crest, 12 hrs. 30 m. from our bivouac.

Illimitable shining fields of space, waves upon waves of distance, clothed in hues that grow softer and more aerial as they curve to the enormously remote horizon; to the north the level lines of the Steppe, to the south tossed Armenian Highlands, east and west snowy vales and pinnacles, a silence that might be felt, such were the impressions of the first moments on this glorious peak.

I enjoy, I hope, the poetry of mountain peaks—above all of virgin peaks. But after I have drunk in the sentiment

of such scenes I like to recognise the topographical features. There was Gestola, Dent and Donkin's peak, just satisfactorily below us; the green valley over its shoulder should be Chegem. The great snowfields of the Zinner, over which next day we must force a pass, called for very particular attention. What a superb icevalley led up to the gap between us and Gestola! Koshtantau (17,091 feet: R.S.) was a surprise, the rocky face of Donkin's photograph was now snow. Dychtau (16,925 feet: R.S.) was masked, all but the pyramidal peak, by a great curtain extending from Koshtantau along the northern side of the Bezingi Glacier. Shkara dominated everything on the watershed, Djanga was something higher than ourselves, their southern precipices streamed with ice. The part of the horizon occupied by snowy peaks was small in comparison to most alpine views, but the peaks were greater than our old friends.

Beyond the sunny hills of Mingrelia and a level floor of sea-haze the distant snowflecked ranges of Kars and Trebizond lay along the horizon. Ararat I could not discover. General Chodzko, when encamped on the summit of Ararat while making the five-verst survey, saw Elbruz at a distance of 280 miles! Neither between the two peaks of Ushba nor those of Elbruz was any difference in height recognisable.

The aneroid marked 16,700 feet. I did not make any further observations except some rough levellings and bearings. I prefer to take my heights from an ordnance survey. Mountaineers are not, as a presumptuous pressman lately remarked, the camp-followers, but the pioneers of science. 'Fiat experimentum in corpore vili.' I accept the proverb. Where our vile bodies have opened the way the glorious army of surveyors has got to follow. I have reason to believe, however, that the aneroid was marking too high, and that Tetnuld will come out finally slightly over 16,000 feet. The peak, the measurement of which (15,947 feet) General Shdanow, the present director of the Caucasian survey, has recently sent me, is probably Gestola, which is perhaps 200 feet less than Tetnuld.

After an hour's stay I thought it prudent to return. The descent of the ridge was easy enough. In something over an hour we were back at the saddle. Light clouds had begun to form in the hollows of Suanetia, and now suddenly as if at a signal swept up to us.

The vapours lingered about the peaks, but they were too light and shifting to trouble us. The descent was without incident. The snow was heavy, but our hearts were light.

Nadelhorn.

Stecknadelhorn.

Hohberghorn.

Hohbergpass.



THE NADELGRAT FROM THE ULRICHSHORN.

From a Photograph by Mrs. MAYN.

The only occasion when I lapsed for a moment into discontent was when the leading guide, knowing our old tracks through the séracs would be bad so late in the day, made for the northern corner of the great plateau. François and I had to insist on a sharp half-face, which brought us after twenty minutes' heavy walking to the long straight slope I had seen the day before south of the rocky boss. We wallowed to our waists in banks of snow, soft, but steep enough to make progress—even by wallowing—rapid. We were soon at the bottom and on hard ice, where the rope could at last be thrown off. Jogging steadily downwards we regained about 7 P.M. our boulder and white-rhododendron bank. The clouds had all melted. Ushba was a noble shadow in the sunset.

Generally in such a situation the thoughts go backwards to fight over again the day's battle; but ours and our eyes were strained onwards. Could anything be seen of our companion and his baggage train on the opposite hill? We searched in vain the sides of the Zanner icefall. I quickly came to the decision to stop where we were, since our beds were already made, in the trust that if our party were on the road, which we should doubtless learn, as soon as it was dark, by their beacon fire, we might catch them up next day. Presently our own beacon flamed up, and after the guides had turned in I rested long beside it in a comfortable hollow, watching the slow muster of the heavenly host and waiting for the responsive glow—which never came. Soon after ten I too crept into my bag, thankful that I had not to seek the narrow shelves of some crowded Clubhut.

(To be continued.)

AN ASCENT OF THE HOHBERGHORN.

BY AUGUST LORRIA.

THE Nadelgrat is one of the most interesting, and at the same time one of the least known, bits of the Monte Rosa district. What Mr. Conway, who knows the Zermatt mountains so well, wrote of it in 1881* still remains true: 'Switzerland abounds in neglected districts. Such, however, for the most part lie round sequestered valleys, and are invisible from the main roads. The pedestrian is ignorant of the names of their peaks, and the cockney climber shuns them, as he shuns all secondary summits. But that a group

* *Alpine Journal*, vol. x. p. 332.

of mountains should be in full view from the most frequented pathway in Switzerland, and that they should to this day be almost as unknown as the Caucasus to the climbing world, is a somewhat noteworthy fact.' Mr. Conway's article on 'The North District of the Saasgrat,' from which I take these words, corrected many mistakes which had been made about the Nadelgrat, but so far failed to draw climbers to this range that, with the exception of the Nadelhorn and the Südlenzspitze, scarcely one of its summits was visited between 1881 and 1886. The Stecknadelhorn was not ascended for the first time until 1887, though Mr. Conway* had pointed out that it was the only unclimbed peak in the Zermatt district of which the height exceeded 4,000 mètres. This singular neglect of a grand range was very surprising, for ambitious young climbers might have been heard consulting with their guides as to what new expeditions they could make in order to have their names and deeds chronicled in the 'Alpine Journal.' In 1886 and 1887 Mr. O. Eckenstein and I made a number of expeditions in and about this group, and we propose to publish a complete monograph on the subject, though we still need some information on certain geological and topographical points, as well as some more photographs, all of which we hope to obtain in the course of the summer of 1888. As my contribution to the hundredth number of the 'Alpine Journal,' I intend to tell the story of my ascent of the Hohberghorn (4,226 mètres = 13,866 feet), which, to me at least, was one of the most interesting climbs I have ever made. I will, however, refrain as far as possible from boring my readers with historical and topographical details, reserving these for the aforementioned monograph.

My start for the Hohberghorn was made after a long lazy spell at Zermatt in the summer of 1886, which I had filled up by doing all sorts of absurd things. For instance, I organised a race on mules one day, open to the guides, whose ambition was stimulated by the offer of a prize of 50 francs, in the course of which race such laughable incidents happened as surpassed our wildest hopes and imaginings. After many such nonsensical deeds as this, I started on July 29, accompanied by Mr. Eckenstein and a porter, for the Festi sleeping place. Despite the warnings of a certain acquaintance of mine at Zermatt, we had not the slightest difficulty in finding the way, for there is quite a broad path leading up to the spot, and we established ourselves for the night in

* *Loc. cit.* pp. 333-337.

the upper of the two camping-places. Our sleeping bags stood here in good stead. They are made of Dr. Jäger's camel-hair fleece, after the usual fashion, the upper part being made to tie, only at one end the cloth is of double thickness, to keep the feet warm. A light mackintosh sheet thrown over the bags helps to keep them dry. We have spent many a night in them, and they have several great advantages. Although the material of which they are made allows the air to circulate freely through it, it keeps out the cold very well, while the whole bag, *with* the mackintosh sheet, only weighs $1\frac{1}{2}$ pounds, so that we ourselves can easily carry them about and can camp just where we feel disposed.

We woke up at 3 A.M. on the morning of July 30, 1886, after having passed a very comfortable night. The weather was fine, and we made haste to prepare our frugal breakfast, consisting of some cakes of chocolate and some cups of cold water; for we do not care about anything hot, and thus save ourselves the trouble of conveying wood about for fires. Gradually the day dawned, and it became lighter and lighter in the direction of the Dom. At 3.45 we two set off alone, carrying in our knapsacks our provisions—chocolate, butter, bread, biscuits, preserved meat, and lemonade. Our porter we sent back to Randa with our sleeping bags. A great block of ice crashed down from the glacier, but mounting over *débris* and moraine, we had no trouble in reaching the Festi glacier. Keeping its right bank, we managed to thread the crevasses and climbed steadily upwards. Across the S. Niklaus valley loomed the Weisshorn and its neighbours, at first dun-coloured, then one by one touched by the rising sun till it seemed as though they were all on fire. The rays of the sun drove the night shadows and morning dimness farther and farther down into the valleys, and lighted up the peaks round the Festi glacier. The Dom alone was white and cold, the great precipice of its N.W. wall towering grandly above us. Meanwhile we had reached the foot of the snow-slope which leads up to the snowy hump marked 3,757 mètres on the Siegfried map. Immediately opposite rose the finely shaped peak marked 3,635 mètres, next to which is a summit of even more striking aspect; neither of them seems to rejoice as yet in a name, and so I would propose to christen them the Vorderes and Hinteres Festihorn. At this point we left the ice, believing that the gap close to the peak 3,757 was the Festijoch, and thinking (wrongly) that the way up to it lay over the rocks on the right bank of the glacier. These

rocks proved easy enough, and it was only here and there that we had to help ourselves with our hands. We rose higher and higher above the Festi glacier, and at 7.15 A.M. we reached the col between the points 3,757 and 3,724. The splendid Hohberg glacier lay at our feet bathed in glorious sunlight, the Dom rose magnificently above it, while over the shoulder of the Dom one caught a glimpse of the mighty Täschhorn. On the other side of the glacier stretched the rugged range which we proposed to explore—seen here in its entire length from the Südlenzspitze to the Dürrenhorn, a grand wall crowned by five peaks. Some idea of this scene may be gained from the reproduction of Mr. Donkin's photograph which accompanies Mr. Conway's paper in vol. x. of the 'Alpine Journal.' The great hole in the uppermost rocks of the Nadelhorn, to which the name is due, showed well against the brilliantly clear sky. The illustration which accompanies the present paper has been reproduced (by her kind permission) from a photograph taken from the summit of the Ulrichshorn by Mrs. Main. It shows the Nadelhorn, the Stecknadelhorn, and, in the background, the Hohberghorn.

We halted at this spot for some time in order to take a look round. I buckled on my 'Steigeisen,' and then let Eckenstein, as far as our 15-mètre rope allowed, down the steep snow-slope descending towards the Hohberg glacier. There he anchored himself with his ice-axe, and in a few strides I rejoined him, without having had to cut a single step, thanks to my 'Steigeisen.' We repeated this operation three or four times, crossed the inevitable bergschrund, and found ourselves on the level glacier. We traversed it direct to the foot of the S.W. arête of the Hohberghorn, getting into some séracs on the way. We could easily have turned them, but I wanted to show Eckenstein how well my 'Steigeisen' worked, and so we went straight through them. I had to cut steps here for Eckenstein, for my 'Steigeisen' enabled me to get on without any. At 9.15 A.M. we reached the foot of our arête. Eckenstein was so delighted with the manner in which the 'Steigeisen' helped me that in 1887 he procured a pair and used them throughout the summer. The arête which we had now to climb was difficult all the way, and made up of many sharp teeth and deep gaps between; but we preferred to stick to it, because, though a traverse to the left would have brought us into a much easier snow gully, we had made up our minds to climb this particular ridge, and did not want to be beaten. The sun

blazed down on our backs; there was not a breath of air to refresh us as hour after hour passed by, and we slowly but steadily worked our way up it. In the places into which the sun did not penetrate the rocks were iced, while now and then a great rock-tower would bar the way. At last, after a very laborious climb, we got on to easier ground, for the last twenty mètres offer no difficulty, and it was down this bit only that Herr Burckhardt's party came in 1881, preferring then to descend by the N.W. flank of the peak. We hurried joyfully over the highest rocks, then covered with snow, reached the snowy arête from which large corniches hung over the Gassenried glacier, and a few minutes later, at 3.45 P.M., gained the summit. We found here a cairn and a rotten bit of the flagstaff which Mr. R. B. Heathcote is known to have left on the top when he made the first ascent in August, 1869.

The Bernese chain rose to the north quite clear and free from clouds, the Bietschhorn and Finsteraarhorn being specially magnificent. The great ice-streams of the Aletsch and the Rhone glaciers lay unrolled before our eyes. Close to us were the Fletschhorn group, the Weisshorn, and all the great circle of mountain giants which encloses the Zermatt valley. Far away, glittering in the clear warm sunshine, were the Grand Combin and Mont Blanc. Deep below was Zermatt itself and the end of the Gorner glacier, while directly beneath us we could see a bit of the carriage road near Randa. We commanded, too, the enormous snow-fields of the Gassenried and Hohberg glaciers. But why should I try to describe this marvellous view? Neither the painter nor the photographer can come any way near to reproducing such a panorama, in which the foreground blended so admirably with the background. And far more powerless than these is the wielder of the pen, who must content himself with making a catalogue of what he sees, and will in the end never succeed in helping less fortunate persons to see with the eyes of imagination what he really saw in the flesh.

At best he can but revive in the memory of another climber the recollection of some similar sight which he has enjoyed in years gone by. Then, too, in every description of a view or of a journey the personal element comes in, so that descriptions of the same objects differ according to the individuality of the writer. As Herr Güssfeldt well remarks in the preface of his admirable book on the Andes, every description of a journey is a bit of autobiography. That is the

reason why in such a description there are defects and faults, for it is often a very much retouched portrait of the writer in which the original has become well-nigh irrecongnisable. Such blots are specially met with in Alpine articles by persons who have overcome the difficulties of a climb by the aid of the rope of his guides or of his companions; for in such cases the writer much resembles a sack of potatoes, the only difference being that the one can and the other cannot describe the experiences undergone. Hence, when a man has been hauled up a peak by the rope, his opinion of the difficulties encountered is not worth very much, though his statements get into circulation and are finally published to the world in his formal narrative of that particular climb. We find that he has the most shadowy recollection of the bits which he could not accomplish unaided. It is always instructive and amusing to hear both sides of the question, and to compare the account of an ascent given by a *Herr* with that given by his guide, both erring not uncommonly, as well in depreciating as in exaggerating the difficulties overcome.

We could not stay very long on top as the day was far advanced, and we did not intend to bivouac anywhere. So at 4.15 we started off on our way down. We retraced our steps along the snow ridge to the summit of a snow couloir which stretches straight down to the Hohberg glacier, and is clearly seen in Mr. Donkin's photograph in vol. x. of the 'Alpine Journal.' Eckenstein hankered to descend towards the Gassenried glacier, and the snow-slope seemed practicable, at least as much of it as we could see. But after my determined declaration that I considered this route very difficult, and perhaps impossible, from what I had seen of it some days before from the Gassenried glacier, Eckenstein made up his mind to descend by the snow couloir to the Hohberg glacier, like Mr. Wainwright in 1879. It appeared quite free from avalanches, notwithstanding the hot afternoon sun, and almost free from falling stones, so we glissaded down it, despite its slope of 47° according to our clinometer. There was a bridge over the bergschrund, and at 5.30 P.M. we were once more on the Hohberg glacier. Eckenstein would not believe me when I assured him that the lower ice-fall was absolutely impassable, as I had ascertained a few days before on my way to a bivouac, so, in a temper with him, in order to prove it to him, I went with him straight down towards it. The sun had been hard at work all day. At every step we sank in deep; the ice was more

and more broken up, until when we were under the glacier which comes down from the Hohberg Pass, near the spot indicated by the figures 3,441 on the Siegfried map, all chance of getting down any farther was absolutely cut off. A monster crevasse stretched from one side of the glacier to the other; and, besides, there was great danger from the bits of ice falling from the Hohberg Pass glacier, as was shown by the surface of the main glacier, which was strewn with fragments of recent avalanches. This little glacier was frightfully dislocated, and hung down in a most alarming fashion, being the outflow of a broad snowfield above, which lower down is squeezed into a narrow rock-gorge. The ice-pinnacles towered superbly into the air, and seemed to set all the laws of gravity at defiance.

(In the summer of 1887 the condition of these glaciers was very much altered. It seemed as if the Hohberg glacier might be forced without any very great difficulty, and the Hohberg Pass glacier did not appear nearly so crevassed or broken up. This is a curious instance of a rapid change in the case of two glaciers, and helps us to understand how much glaciers can change in the course of a longer period.)

There was nothing for it but to beat a retreat. Eckenstein now acknowledged that my stories were true ones, but I made him go first, and as he is rather a heavy man, he was soon punished severely for his want of faith in me. We toiled up the glacier again with great weariness; it was not till 8 P.M. that we stood at the base of the snow-slope down which we had come so well in the morning, thanks to my 'Steigeisen.' Then the snow had been almost too hard, now it was much too soft, and we plunged in over our thighs, dragging ourselves upwards by the aid of our ice-axes thrust in as far as possible. Four times we had to change places on that short bit, but finally, about 9 P.M., we reached the col. The sun had long before sunk behind the Mont Blanc chain, and very shortly total darkness, after a short twilight, would come on. In our haste to reach the level Festi glacier by the last rays of daylight—for we had hidden our lantern on the moraine there on the way up—we lost the track, and tried to force our way straight down to the glacier. However, in spite of several times letting ourselves down by the rope in a rather desperate fashion, considering that it was twilight, we stuck fast at a place about 50 mètres above the glacier. We could not advance any farther, nor could we go back. It was now quite dark, and we were compelled to stop where we were, though our clothes were wet through with

our long wade through the soft snow. It was not a convenient place for a bivouac. Above and below us were sheer walls of rock. Eckenstein found a small shelf on which he could just manage to lie down, but I was only lucky enough to discover one where I could sit; for if I wished to lie down, the whole of my body save my feet, head, and shoulders hung over a steep gully in the rocks. To increase the discomfort of our position a cold north-westerly wind began to blow. We had to resign ourselves to our fate, though I long rebelled against it, but any attempt to push on would simply have been most dangerous. We fastened ourselves to the rocks with our rope. Of course it was impossible to think of sleeping. As the night wore on it became colder and colder; our upper clothing froze quite hard; the thermometer, read by means of a match struck by Eckenstein, marked -7° C. ($=20^{\circ}$ F.), and it was then only 11.30 P.M. I did not think it was worth while to take another reading—it could not help us. The cold pierced us to the very marrow, for it must be remembered that we were still at a height of 3,700 mètres ($=12,140$ feet). It was in vain that we tried to keep warm by hugging each other as tightly as the limits of our prison permitted. Nothing would help us. My feet began to freeze, till at length I took off my shoes, as I usually do at a bivouac, and had not done this time simply because my feet were very wet and I had no dry socks with me. I wrung a good deal of water out of my wet socks and put my feet into my rucksack made of thin cloth. This scanty protection worked wonders; my feet gradually got warm again, and that was a very great thing indeed under the circumstances. The stormy wind whistled among the rocky pinnacles above us, a sudden gust carrying off Eckenstein's hat, his faithful companion on many an ascent, and my woollen mittens, which I had taken off for a moment. Both flew away in the pitchy darkness, and were never seen by us again. Finally, after what seemed an endless time, the long wished-for dawn began to appear. It touched first the clouds floating round the Dom like unquiet spirits. When the day had come, with a great deal of trouble I managed to get into my shoes, which were frozen hard, and we executed a dance on the narrow shelf, certainly not to amuse ourselves, but to unstiffen our cramped and weary limbs. Our faces were ashy grey. Eckenstein had in some measure whiled away the time by smoking, and had warmed his hands with his pipe. This small consolation was, however, denied to me, as I am not a smoker.

Point reached

3690

3843

3783



THE DENTS DES BOUQUETINS FROM THE WEST.

Alps, France. 1871.

We were heartily glad to set off again at 4 A.M. As quickly as our stiff joints would allow us we clambered back to the right track, and hurried down to the Festi glacier, where we met a party on the way up the Dom, though they were later driven back by weather. We found our lantern on the moraine all right. Then it began to snow, and the clouds came down lower and lower. We went straight down to the Randaierbach. Then the snow turned to rain. We descended along the side of the stream, which was bridged over by the remains of an old avalanche; traces of a recent fall lay on the old dirty snow, and could be seen in the gorge, through which roars the stream from the glacier. The fact was that while we had been up on the heights a huge avalanche had come down, which shows that even here one must be on the lookout. We halted from 9 to 11 in Randa, and then drove up to Zermatt, where two famished mountaineers committed such frightful ravages on the good things set before them at the Monte Rosa table d'hôte, that we have a well-founded suspicion that Herr Seiler did not make large profits, if any, out of the lunch that day.

THE DENTS DES BOUQUETINS.

BY G. S. BARNES.

(Read before the Alpine Club, March 6, 1888.)

TOWARDS the end of August, 1887, I arrived at Arolla. I had no aim or ambition except of doing nothing in particular for a few days. In making plans for laziness, however, I had counted, I will not say without my host, but without my fellow guests. The energetic importunities of Mr. Cecil Slingsby soon prevailed, and it was settled on the day of my arrival that I was to undertake a joint venture with him and Miss Blair Oliphant. Each of us was allowed to impose one condition on the party. Miss Oliphant, for whom the unknown has no terrors, desired that the expedition should be an entirely new one; and Slingsby, who had recently whetted but had not satisfied his appetite for guideless expeditions, insisted that we should take no guide; I was allowed to bargain for the luxury of a porter, but only on the understanding that he was to be strictly confined to his 'portorial' functions.

These details were arranged, but we had not yet found our

peak, and the next day Slingsby and I went out to prospect. We came to the conclusion that one of the minor peaks of the Dents des Bouquetins (marked 3,690 on the Federal map) would give us a good climb, and would probably not be beyond our powers.

The range of the Dents des Bouquetins forms the east boundary of the upper Arolla Glacier, and is remarkable for the steepness of its sides and the jaggedness of its outline. Its main arête is studded all along with sharp needles of rock, and looks like an importation from the Chamonix district. Geographically it is a continuation southwards of the great curtain of rock to the east of the Combe d'Arolla, of which the Aiguille de la Za and the Dent Perroc are the best-known points. From near the point 3,783 southwards it is the boundary between Switzerland and Italy, and forms a link in the main Pennine chain of the Alps.

Although the Dents des Bouquetins considerably surpass in height both the Aiguille de la Za and the Dent Perroc, they have been but little visited by mountaineers. So far as I have been able to ascertain, the whole number of expeditions made on any part of the range, including our own, is only seven; I therefore propose briefly to sketch out the history of the range from a mountaineering point of view.

The first ascent of the highest of the Dents des Bouquetins, marked 3848 on the Federal map, was made by Mr. A. B. Hamilton on September 6, 1871.* Mr. A. Cust made the second ascent on August 10, 1876,† and from that year, with the exception of an ascent on September 1, 1885, made by Mr. H. S. King, which I shall have to refer to later, the peak apparently remained unclimbed until August 16, 1887, when Mr. Walter Larden made the ascent, and found Mr. Hamilton's and Mr. Cust's cards on the top, and theirs only. All these parties followed the same route, crossing the Col de Bertol and attacking the peak from behind—that is from the east—and, after reaching the little col between the point 3,783 and the highest point 3,848, followed the arête in a southerly direction to the top. A few days later, on August 27, 1887, a large party, consisting of Mr. Slingsby, Mr. Fox, Mr. Legh Powell, and Captain Herbert Powell, with Martin Vuignier and Maurice Gaspoz as guides, made a variation on the orthodox route by avoiding altogether the little col above mentioned, and striking the arête very little to the north of the point 3,848. Their ascent, in fact, was made by the east

* *Alpine Journal*, vol. vi. p. 28. † *Ibid.* vol. viii. p. 140.

face almost direct to the top of the mountain. These five are the only ascents which have been made of the highest peak.

Of the second peak in height (3,783 on the Federal Map) the first ascent was made by M. Monnier, of the Neufchatel Section of the Swiss Alpine Club. This expedition is recorded by M. Monnier in the visitors' book at Arolla, and from there has been translated into Mr. Larden's MS. guide-book. From this latter source I have taken my information.

The translation runs as follows:—

'First ascent of this N. peak (3,783 m.), August 8, 1884. Started from hotel at 4 A.M. with J. Quinadoz as guide. We arrived at 6.10 A.M. at the foot of the Dent on the East moraine of the Arolla Glacier. We ascended directly towards the North group of the Dents; following first the large snow couloir to the South, afterwards crossing the rocks to the left, and gaining the arête which separates the two parallel couloirs lying more to the North. This route led us to a little col situated between the first and second of the North group of the Dents (reckoning from the South, *i.e.* from the principal col which divides the chain of the Bouquetins, and which separates the North group from the middle one). This col we reached at 10 A.M. The rock is good, but we found it glazed with ice. The highest peak of the North group (consisting of four summits) is the third, reckoning from the South. This is reached by the West arête, partly on rock and partly on an ice-slope, on which about twenty steps had to be cut, and finally by two chimneys. We arrived at the top at 12.10 and erected a cairn; the descent requires much care, especially toward the lower part of the rocks. We left the top at 12.45, reached the Arolla Glacier at 4.5, and the hotel at 6.10.'

M. Monnier does not appear to have published any record of this ascent, except a meagre note in the 'Echo des Alpes for 1884,' p. 332, to the following effect:—'Cime Nord des Dents des Bouquetins (? 3,700). 1^{re} ascension.' The only other ascent of this peak was made by Mr. H. S. King on the 1st of September, 1885, who mistook it for the highest peak in a snowstorm. He found M. Monnier's cairn and then proceeded, by way of the little col referred to above, along the arête to the highest peak.

It is not easy to gather from M. Monnier's account, which I have already quoted out of the Arolla guide-book, the route which he followed. It would seem, however, that the 'large snow couloir' which he mentions is the one which lies to the south of the most northerly group of the Bouquetins, the highest peak of which is marked 3,536 on the Federal Map. From a point not far distant from the head of this couloir, M. Monnier appears to have followed the north-west arête to the point 3,783.

Now I propose to turn to the last of the seven expeditions with somewhat more detail than the five which preceded it.

Starting from the hôtel at 4.40 on the morning of the 30th of August we reached the Arolla Glacier at about a quarter past five. Proceeding straight up the Arolla Glacier towards the Glacier de Za de Zan we skirted closely the point 3,097 in the Federal map. Our intention had been to cross the Glacier de Za de Zan and the Col du Mont Brulé and to attack our peak by the East face. In making this plan we had been influenced by the belief that no one had climbed the West face of the main range at any point, and we thought that the East face was less precipitous.

The Dents des Bouquetins follow the rule observed by all the principal peaks in the Arolla district in that their most accessible side is that which is furthest removed from the Arolla Hôtel. Sometimes it happens that it is the east face which is the easier, sometimes the west, and sometimes the south. But, whether it is east, west, or south, it is invariably the face which is the longest distance from the hotel. In accordance with this most inconvenient rule, the ascent of the Pigne d'Arolla commonly entails crossing the Pas de Chèvres or the Col Vuignette: Mont Collon is usually ascended from the Glacier du Mont Collon—that is from the south: the Aiguille de la Za is believed to be impracticable on the side which faces Arolla, and in order to reach its east face a long circuit has to be made by the Col de Bertol, or a shorter one by the Col de la Za.

But to return to our expedition. As we were rounding the point 3,097, which I have already mentioned, an inviting snow couloir running up from the Glacier de Za de Zan towards the main ridge of the Dents des Bouquetins disclosed itself. We stopped to look at it and decided to inspect it at closer quarters. On nearer inspection, the rocks at the side of the couloir, though steep enough, did not seem to be impracticable as we had imagined them to be. It was at once carried *nem. con.* that we should attempt to avoid the long circuit by the Col du Mont Brulé and make trial of the couloir. It seemed to ascend almost to the arête, and ended immediately below a very conspicuous *gendarme*, which stood up boldly against the sky with a long piece of rock lying horizontally on the top. Our plans thus settled, we breakfasted on the moraine of the Za de Zan Glacier, and after putting on the rope proceeded up a steepish slope of frozen snow towards our couloir. Our order was as follows:—Slingsby was leading guide, and later in the

day proved himself thoroughly efficient in that capacity, Martin Vuignier, whom we had brought with us as porter, was roped second, Miss Oliphant was third in order, while I brought up the rear. The route looked quite simple for some time to come: the couloir, though steep, was apparently free from falling stones. At least the snow in the couloir was not scarred, and there was no trace of stones at the base.

The couloir was reached at 8.40, but, alas, the bergschrund, invisible from below, was of great width. We made several attempts to cross, but there was no bridge, and our attempts were futile. Accordingly we said farewell to the couloir, with but little sadness, for we felt sure that we should meet again a little later, at a somewhat higher level. About forty yards to our left, that is, to the north of the couloir, the bergschrund narrowed, and enabled us to get on to the rocks above it. These rocks proved very steep, and were somewhat glazed with ice. Progress was of the slowest, and after climbing steadily for fifty minutes, we estimated that we were only about seventy feet above the bergschrund. We had now arrived at an exceedingly awkward place, where the choice lay between a steep chimney on our left and some ice-coated rocks on our right. Slingsby preferred the chimney, but eventually, partly on account of the protestations of Martin, and partly because the chimney did not lead in the direction of the couloir, the preference was given to the rocks on our right, which, as I have said, were coated with ice. They were steep and difficult, and I do not think that any member of our party except Slingsby was capable of leading up them.

The couloir proved impossible to reach. The formation of the rocks drove us more and more to the left, and further and further from the couloir. So we climbed upwards, always sloping across the face in a northerly direction, until we reached the lower end of a band of snow which traversed the face in a southerly direction, ending with the arête, above, and not very far distant from, the big *gendarme* which we had noticed from below at the head of the couloir. This band of snow proved most useful, and with its help we reached the arête at the point which we had marked down earlier in the morning, though our route had been more circuitous than we had intended. It was now 11.30, and Martin who like myself had been much impressed by the steepness of the rocks, inquired whether it would not be well to commence our return journey at once. Slingsby explained to him that

the day was yet young, and that we had every desire to continue our climb. To this Martin retorted that, however much we might enjoy a night's rest on mountain or glacier, he must personally confess to an effeminate preference for his bed in his chalet. Having thus delivered himself, he threw up his arms and gave further vent to his feelings by a prolonged howl. I sympathise with him most sincerely. He was on an unclimbed and difficult peak, unable to follow his own wishes, and securely roped to people whom he doubtless considered more or less insane. What position could be more unpleasant?

The arête on which we were standing was very sharp. On each side of us the rocks ran sheer down to the glaciers below, and showed us plainly how narrow the base of the whole range must be. We speculated as to whether it would be easier on our return journey to descend on the Italian side and make the circuit of the range by the Col du Mont Brulé, but no obvious way of descent disclosed itself; and as the east face below us seemed somewhat stone-swept, we decided that it would be risky to exchange the known for the unknown.

In coming along the band of snow before mentioned, our direction had been southerly, but now we turned and climbed along the arête in a direction which was almost due North. After awhile the arête broadened out into a little plateau of loose stones. From this point we saw three peaks rising in front of us, and the same question occurred to each member of the party—which was the highest, and which was the object of our climb? We had imagined that our peak would be easily distinguishable by reason of its sharpness; but, viewed from where we were standing, all three peaks looked equally sharp and steep. We lost no time in consultation, but immediately decided to make for the nearest. For this purpose we turned to the left, that is on to the West face of the range. The rocks soon became very steep, and our way lay up a series of chimneys, all narrow and nearly vertical. At the top of one of these chimneys, Slingsby shouted to me that he thought our way was barred, and that we should have to descend and make another cast.

Immediately above him was a smooth wall of rock, which was manifestly impracticable. The only route which afforded the least hope lay to his right, round and up a boss of rather smooth rock, with no very defined handhold. Across the boss ran a very narrow ledge. Climbing slowly with his knees and elbows, and making good use of his most prehen-

sile stomach, Slingsby worked his way across and up the boss to a point out of sight. He then proceeded to help the rest of the party. Martin was hauled up, perhaps somewhat ignominiously, but it saved time. Then it was Miss Oliphant's turn. Naturally enough she objected to make use of the drastic method which Slingsby had accorded to Martin. Appealed to for assistance, I got into a position where I had good handhold, but no foothold at all, so that my shoulders might serve as a step for her. With this help and a timely tightening of the rope above, Miss Oliphant was soon standing by the side of Slingsby and Martin. It only remains to add that I was then hauled up in as ignominious a manner as Martin had been. How Slingsby got up first, I am really unable to understand, for in the survey which I was able to make of the rock in the course of my rapid passage up it, there seemed to me to be practically no handhold or foothold.

A few more narrow chimneys and we stood at the foot of a slab of rock about 20 or 25 feet high which formed the top. This slab was split right through from top to bottom, and the crack afforded us a means of ascent. Here again, as on other occasions too numerous to mention, I was glad of the friendly assistance of the rope.

To our great disappointment the peak on which we stood was not the highest. Not far to the northward stood another peak which we estimated at 150 feet higher than ours. The temptation to continue our climb was great, but the day was not so young as it had been. The time was ten minutes to two, and Martin had ceased to prophesy a night on the mountain or glacier, only because his gloomy forebodings had become in his mind a certainty. The exact locality of our sleeping-place was with him the only open question. We built a cairn, but it was of very small dimensions, for though the top was cracked in every direction and looked in the worst possible state of repair there were no loose stones. At 2.20 we started downwards in the order in which we had ascended, only reversed, that is to say, Slingsby occupied the responsible position of last man, while I led.

We were fortunate in finding a means of avoiding the boss of rock which had troubled us so much in our ascent; the steep chimneys proved rather less difficult than we had anticipated, and at 3.50 we reached the point where we had struck the arête in the morning. From the arête we again made use of the friendly strip of snow which took us downwards and in a northerly direction, that is, homewards.

The northern end of the snow strip was not far removed from a lateral ridge running down towards the little island of rock of which the point 3,097 is the southern extremity. This ridge we determined to inspect, in hopes that it might prove a shorter and easier route than that of the morning. The hour was getting late, and Martin's forebodings were gradually coming within the range of possibility. The ridge, when reached, looked fairly easy for some distance, but then seemed to come to a sudden end. This, of course, did not necessarily imply any insuperable difficulty, for every climber learns by experience that rocks seen from above always appear to be more precipitous than they really are. If, then, the unseen part of this ridge was practicable, it was obvious that our shortest line of descent lay along it. The shortness of the route tempted us, and we started downwards. At first our only difficulty was the rottenness of the rock. The arête of the main chain above us we had found to be composed of gneiss, and was hard and solid, but the rock on which we now were was very different in character. Friable and rotten, it afforded no hold for our hands. Large pieces continually broke away, and went thundering down below. A little lower the rock became even more rotten. I no longer dared to clear a way for the party as I had done above by pushing down the loose rock in front of me, for I feared that I might thereby undermine the ground on which we were all standing. The whole surface of the rock seemed loose for quite a metre inwards. From time to time, however, a great mass gave way, and in falling started what must literally have been hundreds of tons of rock in a grand avalanche. After the fall of each one of these avalanches the air was full of a strong smell of burning, almost sulphurous in its nature, and like the smell of a cartridge which has just been fired. All this rotten rock was intersected at intervals by broad unbroken bands of white quartz or felspar. Without the hold which they afforded us, our descent would certainly have been at some points dangerous. They, however, were always firm, and we found that it was safe to rely implicitly upon them. At the point where, from above, the ridge had seemed to us to end we found ourselves on a crag with three very steep sides. This was more than we had expected. However, though every way looked unpleasant there was a wide choice. The south side looked safest, and we tried it first, but it would not 'go' easily, so we gave it up and reascended some fifty feet. Then we tried the north side, and after descending a short distance we saw some

ledges below. These we reached, and, descending carefully from ledge to ledge, arrived at the bottom of the crag above-mentioned. Our descent was continued by means of a prolongation of the same ridge which was broken so abruptly above us. Here, as above, we ran no great risk from falling stones, for the *débris*, as it broke away from under our feet, fell down into couloirs on either side of us. But at length the ridge ended, and it became necessary to cross the couloir which lay on our right hand side as we descended. This we did with great caution, for stones were falling almost continuously. I waited at the side until the whole of our party were close together, and then, at a given signal, we ran across. Our descent was continued on the North side of the couloir; after a while we were unfortunately obliged to recross, and this we did observing the same precautions as before. A few more minutes, and we were standing on the narrow col of snow lying between the point 3,097 and the main chain. Here we unroped, and made our final meal off what was left of our bread and a tin of preserved pine-apple. As it was late, and we feared that our friends in the *hôtel* might think it necessary to come out to look for us, it was arranged that I should hurry on alone with what speed I could. Fortunately, as the sunlight faded away the moon rose, and there was no difficulty in seeing the way on the glacier. At 8 o'clock I was off the tongue of the glacier, and could see the lights of the *hôtel* not far off. For a few minutes I missed the path, and stumbled among the boulders which strew the flat ground at the foot of the glacier. Moonlight now seemed to me a very poor substitute for the sun: all the interstices between the boulders were concealed by treacherous shadows, and again and again my shins—already rather sore with climbing—suffered severely. Fortunately, however, I was soon on the path again. When distant about a quarter of an hour from the *hôtel*, two lanterns appeared moving towards me. As I anticipated, they belonged to a search party composed of two Arolla guides. They told me that they had been sent out by the landlord of the *hôtel*, and that they were laden with cognac and all the delicacies of the season. They invited me to partake, but I refused, and invited them to return with me. They replied that stern duty impelled them to continue their search for the rest of our party. My assurances that the rest of our party were following me closely were of no use. Stern duty won the day, and they proceeded along the path towards the glacier. At the foot of the glacier they met Slingsby, Miss

Oliphant, and Martin. As the rescued were in no need of refreshment, the search party—again in obedience to the dictates of duty—sat down by the path and consumed the cognac and delicacies which they had brought with them. This sumptuous meal duly appeared in our bills at the very moderate figure of 2f. 50c. each.

So ended our expedition and its dangers. The climb had been a difficult one; too difficult, perhaps, in the opinion of many, for a party in which the professional guiding power formed so small an element. I feel, however, that I have not given sufficient credit to Martin for the part he played, subordinate though it was. He was most willing and helpful, and carried a heavy knapsack all day with unflagging energy. If he failed to distinguish himself in a more conspicuous manner, it was only because our leading guide gave him no opportunity of special distinction.

THE ANCIENT GLACIER PASSES OF DAUPHINÉ.

BY HENRY DUHAMEL.

SOME notes on the history of the ancient glacier passes of Dauphiné have been published by Monsieur Charles Rabot,* and attention has recently been again drawn to them by Monsieur Paul Guillemain in his interesting article entitled, 'Les Voies Anciennes des Glaciers du Pelvoux,' which may be found in the 'Annuaire du Club Alpin Français' for 1886, pp. 3-24. I have got together some evidence on the subject which clears up several doubtful points, and am encouraged by the Editor of the 'Alpine Journal' to believe that the following notes may interest some readers of that periodical.

The village of S. Christophe is the *chef-lieu* of the largest commune in point of area but one (near Arles) in France, for it includes the whole of the upper valley of the Vénéon, with all its side glens and glaciers. It stands to La Bérarde as S. Niklaus does to Zermatt. Now on September 3, 1673, the 'Assemblée des manants et habitans de la Communauté de St. Xphle' (this very village) drew up the following *procès-verbal* relating to the boundaries of the commune:—'Déclarant tous unanimem^t que lad. comm^{te} de St. Xphle est située dans led. mandem^t d'oisans dans lection de Grenoble lequel mandem^t et paroisse de St. Xphle est cadastrée depuis si longtemps dont nest mémoire d'homme. Icelle comm^{te} se confronte commençant au fond du lac tandant au col de vallon gassand et de la au col de la mel-liande et au col garansaud jusques au col de la temple et jusques au col des estancons jusques au vallon du moulin ainsy que,' etc.

When I tried to identify these names I found, to my delight, that

* *Alpine Journal*, vol. x. pp. 275, 276; *Annuaire de la Société des Touristes du Dauphiné*, 1882, pp. 238-242.

the information furnished to me by the present inhabitants of the village agreed precisely with what I had learnt from examining old books and maps of the district.

The *Fond du Lac* is, of course, the well-known Plan du Lac—the great stone-strewn plain above Vénosc and below S. Christophe.

The *Col de Vallon Gassand* is the Col de la Haute Pisse, leading from the Combe de la Mariande to the Combe de la Pisse and the Val Jouffrey. On the S. Christophe side of the passage, the French Ordnance map marks at the entrance of the Combe de la Mariande the Chalets de Gassaudia, which are called by Cassini's map Gassaudoure, and are obviously the source whence the 1673 name of the pass was taken. The pass is one of the most ancient in the district, and is mentioned on a great number of old maps. We must be careful to distinguish it from the Col de la Mariande, which lies to the E. of it, and is a pass for mountaineers and chamois hunters only.

The *Col de la Melliande* is the Col de la Muande, leading from the Combe de la Lavey to the Valgaudemar. Bourcet's map calls it Col de la Méande.

The *Col de Garansaud* is the Col du Says, the most frequented pass between the head of the Vénéon Valley and the Valgaudemar. On De Beaurain's very interesting map of the diocese of Grenoble (1741) this pass is named Col de Garanjon, the *Vénéon river itself bearing the name of Garanjon*, which was naturally transferred to the pass near its source. The Col du Says is the pass by which Valgaudemar guides prefer to return home after having made ascents near La Bérarde.

We reserve for the present the question of what pass was meant in 1673 by 'Col de la Temple.'

The *Col des Estançons* is certainly identical with La Blottière's (1710) Col des Estançons, Beaurain's (1741) Col de Romanche, and the well-known pass now called the Col du Clot des Cavales, leading from La Bérarde to La Grave by the Vallon des Etançons and the Clot des Cavales.

The *Vallon du Moulin* is that now known as the Vallon de la Selle or du Diable, and is so called from a mill which stands a little way above the Pont du Diable, just below the village of S. Christophe.

The most interesting question raised by the document of 1673 is the identification of the 'Col de la Temple.' We have seen above that the other names enumerated in that paper can be clearly connected with names still well known in the district. The frequented glacier pass which now bears the name of the Col de la Temple is above the 'Montagne,'* always known in the Vénéon valley as the 'Montagne de Temple,' or 'Tempe,' and indicated by that name on the map of Bourcet (1754). De Beaurain (1741) inserts the 'Col de Teple' on his map exactly in the right place, adding the usual symbols to show the precise situation of the pass and the route up to it. Le Rouge (1745) also mentions the 'Col du Teple' on his map. On the other hand, several writers call this pass the 'Col de la Grande Sagne' or 'de

* 'Montagne' includes the whole area of a side glen, glaciers, pastures, rocks, and chalets.

l'Allée Froide' (the map and 'Mémoires' of La Blottière, c. 1710), 'Col de Valfroide' ('Mémoires,' and the small map in them, by Bourcet, c. 1754), 'Col de la Grande Seigne' or 'de l'Alfroide,' 'Col de la Grande Sagne' or 'de Valléefroide,' 'Col de la Grande Sagne' or 'de l'Alfroide,' 'Col de Lallefroide,' &c. The names of Ailefroide and Grande Sagne are still applied to spots which are passed at the present day on the way up from Vallouise to the Col de la Temple.

In short, as so commonly happens in the Alps, the same pass bears different names taken from the 'montagnes' on either side.

It is stated by some authorities * that the Col de la Temple was discovered by the chamois hunters Joseph and Pierre Rodier. This is a mere legend. The same persons who spread this report declared at the same time that before their discovery 'la vallée de St. Christophe était regardée comme une impasse sans issue;' † and M. Elisée Reclus wrote, ‡ 'Les chasseurs Roudier (de la Bérarde) ont découvert au milieu des glaces trois cols de plus de 10,000 pieds de hauteur, qui permettent de passer de la vallée de la Bérarde soit dans celle de la Romanche soit dans la Vallouise soit dans le Val Godemar. Avant cette époque aucun montagnard, pas même un chasseur de chamois, n'avait depuis longtemps franchi les gorges environnantes, et les quelques habitans de la Bérarde agglomérés dans leurs petites cabanes à demi enterrées dans le sol ne communiquaient avec le reste du monde que par la vallée de St. Christophe.' Now the three cols said to have been 'discovered' by the Rodiers were the Col de la Temple, the Col du Says, and the Col du Clot des Cavales, all three, as we have pointed out above, well known as early as 1673, and hence not 'discovered' in 1844. Besides, Bourcet wrote as follows in his 'Mémoires': || 'De Vallouise un chemin qui passe au village de la Pisse, à celui de la Jusse, au col de Valfroide, à Saint-Christophe, à Venan, va joindre la petite route au Bourg d'Oisans. Ce chemin traverse les glaciers, et les éboulements l'ont rendu impraticable; aussi depuis plus de cinquante ans il n'y a peut-être passé personne.'

According to M. Reclus, by 1860 the Rodiers had already guided at least fifty persons over the three cols 'discovered' by them, starting as a rule from La Bérarde. For many years a regular track has existed from the spot where one leaves the Vénéon valley to climb through a forest, pastures and a moraine to the Glacier de la Temple, which is crossed for half an hour more in order to reach the col, there being no difficulty at all on the way. On the Vallouise side one goes down a wide rocky gully—also quite easy—to the Glacier Noir, near the foot of the couloir leading up to the Col de la Coste Rouge, a pass lying a little to the S. of the Col de la Temple, and about 131 mètres lower. The height of the Col de la Temple is 3,283 mètres. The

* *Tour du Monde*, 1860, p. 406, and Joanne, *Itinéraire du Dauphiné*, 1863, i. p. 194.

† Taulier, *Histoire du Dauphiné*, p. 389.

‡ *Tour de Monde*, 1860, p. 406.

|| *Mémoires Militaires sur les Frontières de la France, du Piémont et de la Savoie depuis l'Embouchure du Var jusqu'au Lac de Genève*. Paris, an X (or Berlin, 1802). 1 vol. 8vo. with map, p. 148.

Col de la Coste Rouge is very tempting to the traveller approaching it from the Vallouise side. The axe must be used in mounting the steep ice or snow couloir by which it is gained from the E., while on the other side the Glacier de la Coste Rouge has some crevasses which may at times be awkward. The way over the col one is, in part, exposed to stones falling from the formidable precipices of the Ailefroide. The Vénéon valley is gained by means of 'roches moutonnées' which are not altogether easy, and require some care. It must be particularly noted that from the Glacier Noir to the Vénéon valley the routes over the Col de la Coste Rouge and the Col de la Temple are (like the upper glacier basins on either side of the ridge traversed by these two passes) entirely distinct, the Pic de la Temple (3,314 mètres), and a rocky ridge falling from it to the W., separating them from one another.

I thought it well to ask the S. Christophe guides for an answer to the following question: Which of the two passes—the Col de la Coste Rouge or the Col de la Temple—was in their opinion the most direct, the easiest, and the one most frequented by guides on their return journeys?

To this Pierre Gaspard, the elder, replied in writing that the S. Christophe guides on their return journeys from Vallouise *always* choose the Col de la Temple as the easiest pass; that it was on August 1, 1877, that he first crossed (with Monsieur E. Boileau de Castelnaud) the Col de la Coste Rouge; that both before and since the crossing of this last-named pass the Col de la Temple had been the most frequented pass from La Bérarde to Vallouise; that the Col de la Coste Rouge is *not* the shortest passage for the guides returning from Vallouise to S. Christophe, and that the S. Christophe guides have never crossed it on their way home—'à moins que ce n'ait été à titre d'essai, chose qui ne s'est pas généralisée et dont je n'ai pas eu connaissance.' This is the opinion also of all the guides of the district, as I am assured by Christophe Roderon.

I may thus sum up the conclusions at which I have arrived:—

(1) A direct pass between the Vénéon valley and the Vallouise has always existed, a pass more or less frequented, and known as Col de la Grande Sagne or Col de l'Ailefroide, on the Vallouise side, and as the Col de la Temple on the Vénéon side.

(2) The Col de la Temple was *not* discovered in 1844 by Rodier any more than the Col du Says.* If it had been discovered at that time, it would follow that *no* pass was previously known between the Vénéon valley and the Vallouise, a conclusion which is absolutely opposed to the evidence of numerous documents proving the existence of a pass from one valley to the other.

(3) The Col de la Temple takes in all the easy part of the Col de la Coste Rouge on the Vallouise side; and by crossing it one may avoid the difficult or even dangerous bits of this last-named col.

* The Col du Chardon has, I believe, been as much frequented by the inhabitants of the Vénéon valley and the Valgaudemar as its neighbour, the Col du Says, of which it is, in a fashion, a variation.

(4) The Col de la Temple is held by the S. Christophe guides to be the most direct pass from the Vénéon valley to Vallouise.

In the 'Guide du Haut-Dauphiné' (pp. 134-137) my colleagues and I did not definitely state that the Col de la Temple was the ancient pass between the Vénéon valley and the Vallouise. We are convinced that both the Col de la Temple and Col de la Coste Rouge have been crossed again and again by travellers coming from Vallouise, and that the Col de la Temple has always been the most frequented, especially by the travellers starting from the Vénéon valley.

It was the Col de la Temple which was crossed on June 29, 1877, by a party of guides and candidates for the position of guides. I accompanied them as far as the upper part of the Glacier Noir. Possibly they tried to reach the gap (3,524 mètres) between the Pic Coolidge (3,756 mètres) and the Fifre (3,730 mètres), but ultimately they crossed the Col de la Temple to La Bérarde, as appears from the official account of their round in the 'Durance' of July 15, 1877, thus carrying out the official programme given in the same paper for June 24, 1877. It is clear that they did *not* ascend any peak on the way, least of all the Pic Coolidge (3,756 mètres), so christened by M. Guillemin on his 1879 map,* though he there erroneously attributes to it a height of 3,800 mètres, assigning 3,524 to the Col de la Temple (really 3,283 mètres) and 3,756 to the Pic de la Temple S. of the col, though it is really only 3,314 mètres high, as I ascertained on my ascent in 1880.† The figures on the French Ordnance map, particularly as regards the ridge between the Ecrins and the Ailefroide, mark very exactly the position of the various peaks and passes which really exist, but the 'figuré du terrain' is there so confused that it is nearly impossible to say to which peak or pass they really refer, and it is this which has led M. Guillemin and many others into error, even when they have actually visited the spot.

IN MEMORIAM.—JOHN FREDERIC HARDY.

THE cheerful countenance of John Frederic Hardy has disappeared from the sight of his many friends. In their eyes he was, perhaps, first a mountaineer, and secondly a man of highly-cultivated intellect. Hence his Alpine associations become the first attraction.

One-and-thirty years ago—that is to say, in the summer of 1857—I left the pleasantly situated little inn at Guttannen on my way to Meyringen. Sleeping quarters at the inn had formed no exception to the general rule, as the amount of water there available for ablution was in inverse proportion to the wealth of waters that gladdened the eye in every other direction. A stream that meandered through the lacustrine formation of the Hasli-Thal presented a welcome opportunity for the morning tub. Towards the close of an *al fresco* toilet two travellers

* See *Annuaire du C. A. F.*, 1886, p. 18 note, and *Bulletin du C. A. F.*, 1887, p. 291.

† See *Annuaire du C. A. F.*, 1880, p. 18.

appeared upon the scene. They were William Mathews, of St. John's College, and St. John Mathews, of Trinity College, Cambridge. As we journeyed onwards together, two projects were suggested by my companions. The first was hinted at with bated breath, as almost unparalleled in its audacity: it was the ascent of the Finsteraarhorn; the second appeared far less difficult of accomplishment: it was the formation of some kind of club for mountaineers. I mentioned the names of two friends whom I was then on my way to meet at Interlachen, and who, I thought, would heartily join in both projects.

We parted, but to meet again; and on August 5, at the Bear Hôtel, Grindelwald, I introduced to the two Mathews my two friends, J. C. W. Ellis and John Frederic Hardy. Then and there dawned a new era in mountain climbing, and in mountain association, for an attack upon the proudest monarch of the Bernese Oberland, and the bond of fellowship that should unite together all participators in Alpine victories, were the two topics that engrossed our thoughts. Thus was Hardy one of the few who were, from its beginning, identified with a movement which, combining in one harmonious whole the physical power that conquers the snow-clad giants with the kindly social feeling that endurance of mutual difficulty creates, has resulted in the formation of the Alpine Club.

How insuperable were the difficulties of our contemplated ascent considered to be may be gathered from Hardy's own words. In 'Peaks, Passes, and Glaciers' he says:—'Some few days before I left Cambridge, a laugh was raised at my expense by the suggestion of a facetious friend that I might distinguish myself by an ascent of the Finsteraarhorn—a suggestion that was intended to have pretty much the same force as would now be conveyed by a recommendation to try the Matterhorn.' It is almost needless to add that, after crossing the Strahleck, we successfully attacked the Finsteraarhorn; such deeds are matters of history. But are not the mountain achievements of Hardy recorded in the chronicles of the Alpine Club, and in the living lines graven in the minds of his many friends?

If such things can be, the eye of imagination might behold the spirit of John Frederic Hardy revisiting the scenes he loved so well. The Bristen-Stock, upon whose rocky bosom he and I slept so trustfully, would acknowledge the presence of a master; the Mischabel, whose narrow peak admits the presence of but one single foot, would respond to the light touch of his fleeting spirit; the Breithorn, along whose snowy cornice he alone guided a party of friends, would recall the sounds of merriment that rang through the subtle air when the summit was attained. But it is not isolated summits only that would recognise his presence. For many seasons Hardy went again and yet again to the Riffel; and when increasing years put a stop to the climbs of earlier days, he would throw himself down luxuriating in the sunshine of the Gorner Grat.

Dare we speculate upon the day-dreams that would then present themselves unbidden to his restless mind? In the far distance he would recall, as in a vision, his wanderings in classic Greece; to his mind's eye, too, there would appear, amid the minarets of Constanti-

noble, the form of a young man sick almost unto death, at whose bedside he had ministered with unwearying kindness, until his pupil was restored. In imagination he would once more feel the suffocating fumes of Etna, and a smile would steal across his features as he remembered the reproaches for want of perseverance with which upon his return he was assailed, when, in truth, Alpine training had brought him back some hours earlier than had been expected.

From the burning Sicilian mountain his dreamy thoughts would flit rapidly to the snow-clad peaks of Switzerland, and then would be mentally reproduced the vivid scenes of the Bernina ascent. The hut at Boval, the Gemsen-Freiheit, the icicle crevasse, the crowning success, the rapid descent, the hearty reception, the triumphal procession, the huge bonfire, the strains of 'God save the Queen'—all these would live again in his remembrance. But Hardy is still stretched happily upon the Gorner Grat, and his roving spirit is drawn homewards again to its favourite spot. There would pass before him the shadowy picture of the passage of the Alphubel with C. H. Pilkington and R. Stephenson; then, as his mind wandered along the Roseate chain, it would dwell with lingering fondness upon the Lyskamm ridge, whose highest peak had never been attained. Leslie Stephen had been driven back by the state of the snow; F. F. Tuckett, too, had failed owing to the prevalence of fog; thus it was reserved to Hardy, the chosen leader of the party, to be the first who should place his foot upon the hitherto untrodden summit. Such might be the visions of Hardy as he inhaled the balmy air of the Gorner Grat.

One morn I miss'd him on the 'custom'd hill,
The next with dirges due, in sad array,
Slow through the church-way path we saw him borne.

But the next day, and the next, the *genius loci* of the Monte Rosa range, from the Cima di Jazzi on the east to the Dent Blanche on the west, that had communed with him in the past, would greet his cheery spirit when it revisited his accustomed haunts.

John Frederic Hardy was born on January 25, 1826. As a boy he was of a social and genial disposition, but he was withal most persevering when mental work was required; the same indomitable perseverance that enabled him to achieve mountaineering success placed at his command the rewards of intellectual labour. In 1833 Hardy became a pupil at the Islington Proprietary School, of which Dr. Jackson, who was afterwards created Bishop of London, was the head master. Here he gained many prizes, including those for Latin and English poetry. Thence, in 1842, he went to King's College, London, and after obtaining there his A.K.C. he went up to Trinity College, Cambridge, where, in 1848, he took his B.A. as thirty-third wrangler. During his sojourn at the University Hardy had made a large circle of friends. These constituted a genial, kindly disposed, but yet a studious set. Among them may be numbered William George Clark, public orator, and Augustus Arthur Vansittart, auditor of Trinity, both of them men of the most accomplished spirit. These friends and many others have preceded Hardy to the world of spirits.

In 1850 Hardy accepted the post of mathematical master at Stockwell Grammar School. In this capacity he was so successful in bringing out the resources of even the most stupid of his pupils that his friends recognised him as a born teacher of others; the boys, too, when he finally left the school in 1855, presented him with a silver claret jug in token of their regard and esteem.

In the 'Times' of March 12, 1852, appeared the following paragraph:—

'J. F. Hardy, M.A., late scholar of Trinity College, Cambridge, has been nominated by the court of the Fishmongers' Company to their fellowship at Sidney Sussex College, vacant by the resignation of the Rev. J. Richards, M.A.'

It was in this year, too, that Hardy was ordained by the Bishop of Ely. Although he had obtained his fellowship, Hardy steadily continued his work at the Stockwell school. In 1856, however, he was chosen by the University as Senior Proctor, and he then determined to make Cambridge his permanent residence.

It was in the following year—that is to say, in 1857—that the small party of mountaineers who formed the members of the Alpine Club met at Grindelwald, and thence crossed the Strahleck together. Nothing perhaps elicits more admiration from a mountain climber than the richness of the Alpine flora. Hardy in his joyous mood had decked himself in every available spot with a floricultural display. Thus adorned, and clad in holiday suit, Hardy at the summit of the Strahleck wall met a youthful undergraduate. At their last interview, Hardy, arrayed in the Proctorial robes of authority, and with the dignified tone of the University don, had proctorised the youth for certain irregularities. The boy's astonishment and the Senior Proctor's amusement may be imagined.

After taking his B.D. degree, Hardy became Steward and Prælector of his college. He worked hard for some years as a private coach at Cambridge, and thus so increased a limited income as to enable him to make an annual visit to his favourite Swiss hunting-grounds. He was successful with his pupils, he was much liked and esteemed by a large circle of University friends, and was welcomed by all as a kind, hearty, cheerful companion. His health at length gave way, and, after months of acute suffering, he at last bade farewell to this world, to all its joys and to all its troubles. He died March 27, 1888.

Yes, John Frederic Hardy was a true mountaineer, and a mountaineer, too, when climbing required much careful foresight. He was a genial companion, and a genial companion, too, when trouble and difficulty threatened to cast down the boldest spirits. But Hardy was more than a true mountaineer, he was more than a genial companion, for when cloud and sickness oppressed the brow, and when evil days were ready to chase away faith and hope, it was Hardy who was ever ready to offer the wise counsel and the firm Alpine hand-grasp to all who, like myself, could claim the privilege of being numbered among his friends.

E. S. KENNEDY.

ALPINE NOTES.

ALPINE CLUB RELIEF FUND.—The following letter has been sent to all members of the Alpine Club:—

March 1888.

DEAR SIR,—The Committee of the Club have authorised us to make an appeal in their name, to the Members, on behalf of the sufferers from the recent destructive avalanches in the Alps.

This winter has been characterised by exceptionally heavy falls of snow. Accounts recently received from abroad, while fully confirming previous reports of calamities in some instances, add largely to them in others; for example, we may mention that in the North Italian Valleys more than one hundred lives are known to have been lost, and damage done which is estimated at 500,000fr. In the Saas Valley, in Randa and the adjoining districts, there has been loss of life, and great loss of property, especially cattle. The list of disasters could be greatly extended, but we need not now multiply instances.

The Management of the Fund will be undertaken by the Committee of the Club, and all subscriptions will be acknowledged in the 'Alpine Journal' and the 'Times' newspaper.

An appeal will be made also to the general public through the Press.

Subscriptions may be paid direct to Messrs. Twining, 215 Strand, W.C., to account 'Alpine Club Relief Fund,' or to either of the Hon. Treasurers.

We are, dear sir, yours faithfully,

C. T. DENT,

61 Brook Street, W.

W. F. DONKIN,

142 Sinclair Road, Hammersmith, W.)

Hon.
Treasurers.

The following subscriptions amounting to 418*l.* 16*s.* 3*d.* have been already received or promised:—

	£	s.	d.		£	s.	d.
D. J. Abercromby, Esq.	5	5	0	G. E. Foster, Esq.	10	0	0
Sir F. O. Adams, K.C.M.G.	2	2	0	D. W. Freshfield, Esq.	2	0	0
Clifford Allbutt, Esq.,				F. Gardiner, Esq.	2	0	0
M.D.	1	1	0	R. Gaskell, Esq.	3	3	0
R. N. Arkle, Esq.	5	5	0	Rev. H. B. George	1	1	0
R. F. Ball, Esq.	1	1	0	W. S. Harris, Esq.	1	1	0
G. S. Barnes, Esq.	3	3	0	Rev. A. C. Haviland	2	2	0
R. M. Beachcroft, Esq.	5	5	0	C. G. Heathcote, Esq.	1	0	0
Prof. Bonney, F.R.S.	2	0	0	H. W. Henderson, Esq.	2	2	0
Rev. J. T. Bramston	5	0	0	A. K. Hichens, Esq.	2	2	0
W. J. Bull, Esq.	1	0	0	G. H. Hodgson, Esq.	2	2	0
C. Burlingham, Esq.	1	1	0	H. W. Holder, Esq.	1	1	0
H. E. Buxton, Esq.	2	2	0	M. Holzmann, Esq.	5	5	0
Lieut.-Col. J. R. Campbell	1	1	0	J. A. Hutchison, Esq.	1	1	0
Ellis Carr, Esq.	3	3	0	T. P. H. Jose, Esq.	2	2	0
M. Carteighe, Esq.	5	5	0	J. A. Luttman Johnson, Esq.	2	2	0
H. Cockburn, Esq.	2	2	0	H. S. King, Esq., M.P.	10	10	0
Prof. W. M. Conway	1	1	0	W. Larden, Esq.	1	0	0
Rev. W. A. B. Coolidge	1	1	0	C. E. Layton, Esq.	3	3	0
R. R. Dees, Esq.	3	0	0	W. Leaf, Esq.	5	0	0
C. T. Dent, Esq.	21	0	0	R. Liveing, Esq., M.D.	2	2	0
W. F. Donkin, Esq.	3	3	0	A. T. Malkin, Esq.	2	2	0
J. Eccles, Esq.	5	5	0	W. Marcet, Esq., M.D.	2	2	0
T. W. Evans, Esq.	2	0	0	C. E. Mathews, Esq.	5	5	0
Rev. A. Fairbanks	2	2	0	J. O. Maund, Esq.	5	5	0
J. D. Finney, Esq.	1	1	0	H. T. Mennell, Esq.	2	2	0
E. H. Fison, Esq.	3	3	0	F. C. Mills, Esq.	3	0	0
C. F. Foster, Esq.	5	0	0	G. H. Morse, Esq.	2	2	0

	£	s.	d.		£	s.	d.
A. Mortimer, Esq.	1	1	0	Rev. J. M. Gordon	2	2	0
W. Muir, Esq.	3	3	0	Mrs. Topham	2	2	0
Rev. F. H. Murray	3	3	0	A. Henderson, Esq.	2	2	0
R. C. Nichols, Esq.	2	2	0	A. Shipley, Esq.	2	2	0
W. J. Nixon, Esq.	1	1	0	J. R. Capron, Esq.	2	0	0
H. J. Norman, Esq.	3	0	0	H. Downes, Esq.	2	0	0
C. Oakley, Esq.	3	3	0	Mrs. Tomlinson	2	0	0
C. Packe, Esq.	2	0	0	James Gill, Esq.	2	0	0
H. Pasteur, Esq.	2	2	0	M. E. Moysey	2	0	0
J. E. H. Peyton, Esq.	1	1	0	N. H. Vertue, Esq.	2	0	0
C. Pilkington, Esq.	5	0	0	W. Bracken	2	0	0
L. Pilkington, Esq.	3	0	0	Rev. C. Dent	1	4	0
F. Pollock, Esq.	2	2	0	W. C. Clayton, Esq.	1	1	0
W. W. R. Powell, Esq.	1	0	0	J. F. Cobb, Esq.	1	1	0
A. D. Puckle, Esq.	1	1	0	Miss Dismore	1	1	0
W. B. Puckle, Esq.	2	2	0	H. D. Waugh, Esq., M.D.	1	1	0
G. H. Savage, Esq., M.D.	2	2	0	J. Williams, Esq.	1	1	0
F. O. Schuster, Esq.	5	5	0	Mrs. Blandy	1	1	0
Leslie Stephen, Esq.	2	2	0	Rev. M. R. Edmeades	1	1	0
S. F. Still, Esq.	3	3	0	Mrs. S. Warner	1	1	0
R. G. Tatton, Esq.	2	2	0	J. J. Morgan, Esq.	1	1	0
F. Tendron, Esq.	2	2	0	A. G. Feraud, Esq.	1	1	0
H. Thomas, Esq.	1	0	0	W. A. Burnett, Esq.	1	1	0
J. J. Thorney, Esq.	2	2	0	W. J. Palmer, Esq., M.D.	1	1	0
J. W. Hook Thorp, Esq.	1	0	0	W. Sharp, Esq.	1	1	0
A. G. Topham, Esq.	5	5	0	C. Reeve, Esq.	1	1	0
J. Tyndall, Esq., D.C.L., F.R.S.	3	3	0	W. Weston, Esq.	1	1	0
H. Wagner, Esq.	2	2	0	Miss Evans	1	0	0
Horace Walker, Esq.	5	0	0	'Sans Souci'	1	0	0
F. A. Wallroth, Esq.	10	10	0	L. M. C.	1	0	0
H. Weber, Esq., M.D.	2	2	0	Rev. A. A. Scott	1	0	0
J. H. Wicks, Esq.	3	3	0	E. Downes, Esq.	1	0	0
Alfred Williams, Esq.	2	2	0	Mrs. Lacy	1	0	0
H. G. Willink, Esq.	3	3	0	J. S. Mann, Esq.	1	0	0
The Hon. Mr. Justice Wills	5	5	0	W. Bracken	1	0	0
C. Wilson, Esq., M.D.	1	0	0	Miss Openshaw	1	0	0
R. D. Wilson, Esq.	5	0	0	E. Wheeler, Esq.	1	0	0
				H. T. Rhoades, Esq.	1	0	0
J. H. Daniell, Esq.	10	10	0	Miss L. Cade	0	15	0
J. C. J. Drucker, Esq.	10	0	0	Per L. R. Mayne, Esq.	0	11	0
Mrs. E. P. Jackson	5	5	0	Miss E. Downes	0	10	0
C. B. Heberden, Esq.	5	5	0	Miss F. Hawtrey	0	10	0
Lady Augusta Onslow	5	5	0	C. Sergison	0	10	0
P. W. Squire, Esq.	5	5	0	M. A. E. Halliwell	0	5	0
W. Edwards, Esq.	5	0	0	Miss Lucy Cotes	0	5	0
Mr. and Mrs. R. Longfield	5	0	0	Rev. W. Howlett	0	5	0
E. C. and M. J.	5	0	0	Rev. J. Godson	0	5	0
H. Prescott, Esq.	5	0	0	E. S.	0	5	0
F. Schuster, Esq.	5	0	0	A Lover of Zermatt	0	2	6
W. R. Portal, Esq.	4	0	0	Anonymous	0	2	6
G. Broke, Esq.	3	18	9	A Sympathiser	0	2	6
E. Schuster, Esq.	3	0	0	L. R. Mayne, Esq.	0	2	0
H. B. Blandy, Esq.	2	2	0	A Lover of Switzerland	0	2	0
H. A. Beeching, Esq.	2	2	0	A.	0	1	0

Herr Lorria has also sent to Herr Seiler direct the sum of 120 francs collected by him in Vienna, and subscriptions are being raised by the various foreign Alpine clubs.

At a meeting of the Committee held on April 18 it was decided to send out at once 200*l.* for the relief of the distress in the North Italian valleys, 40*l.* for the benefit of the Randa district, and 40*l.* for the benefit of the Saas district. The Central Committee of the Italian Alpine Club will superintend the distribution of the first-named sum. The money for the Randa district will be distributed under the advice of MM. Alexander Seiler and Josef Seiler, and that for the Saas district will be entrusted to the Curé, the Vicaire, the Syndic, and the Landlord of the Hôtel at Saas-Grund.

The Committee have endeavoured to ensure that in the distribution of the Alpine Club Relief Fund the following general conditions shall be, so far as may be possible, observed:—(1) That no part of their fund be applied to the repair of injury to any church, public building, or hotel, or for the succour of any person not really in want of charitable aid. (2) The funds to be applied generally towards the reinstatement of buildings belonging to the poorer peasants or towards the replacing of stock or cattle, or in other ways which will help the recipient to recover his own position for himself and to resume profitable industry. (3) That a detailed account be rendered of the manner in which the funds have been distributed.

Writing under date April 17, Mr. R. H. Budden states that, from the latest information received, 158 lives had been lost in the Italian valleys, and the damage done was then estimated at about one million of francs.

The 'Schweizer Alpen-Zeitung' of April 15, 1888, contains a distressing account of disasters due to the exceptional avalanches. Thus in the Canton Ticino 41 lives had been lost and 420 head of cattle of all kinds. It is hoped that further subscriptions may be forthcoming, and that substantial aid may be given to the sufferers in these less visited districts, as well as to those about Saas and Zermatt.

ACCESS TO MOUNTAINS IN THE LAKES.—We gladly publish the following paragraph, which has been forwarded to us:—'We are given to understand that the very important test case of right of access to mountain summits, as involved in the Latrigg case at Keswick, is expected to be heard at the coming summer Assizes, Carlisle, and it is clear that the costs involved in such an arduous undertaking (*pro bono publico*) are sure to be heavy. A guarantee fund is being raised, and not a single lover of our English Lakes, or seeker of health or rest in the land of our Lake Poets, should neglect to support the efforts made by the defendants in this case, on behalf of such national vital interests. Promises of guarantee or donations to the defence fund will be received and acknowledged by Mr. Henry Irwin Jenkinson, Keswick, Cumberland, the hon. sec. and treasurer.' It is stated in an accompanying circular, issued by the Keswick and District Footpath Preservation Association, that 'Now for the first time in the memory of man, the ascent of a Cumberland hill, of any height, has been obstructed, and the residents and visitors to Keswick have been warned from ascending the most important height within easy reach of the town. Obstructions of a formidable nature have barred the ways, which, if acquiesced in, will deprive the public of one of the most beautiful

panoramic scenes in Lakeland. Latrigg, the hill in question, is a spur of Skiddaw, overhanging Keswick, 1,200 feet above sea-level. The public access to the top has only been questioned within the past two years.'

THE DAUPHINÉ GUIDE-BOOK.—The publisher of this work (Mons. Gratier, of Grenoble) has issued a notice (dated February 15) to the subscribers to the effect that the maps belonging to it will be issued in time for use during the summer season of 1888, and that the delay in their appearance has been solely due to the fact that the gentleman who undertook to prepare them (Mons. H. Dubamel) could not procure earlier some important information which he required to bring his work to an end.

WINTER EXPEDITIONS.—The January number of the 'Rivista Mensile' of the Italian Alpine Club gives the following particulars of the traverse of Mont Blanc effected by Signori Vittorio, Corradino, Gaudenzio, and Erminio Sella. Accompanied by Giuseppe, Daniele, and Battista Maquignaz and Emile Rey, they went up to the Aiguille Grise hut on December 31. There they were detained by bad weather no less than three days. Starting at midnight, they gained the summit of Mont Blanc at 1.20 P.M. on January 5, having been much delayed by the vast quantity of freshly fallen snow and of ice on the rocks. The weather was becoming bad when they gained the summit and snow falling, but there was not much wind and the temperature was only -17° C. ($=1^{\circ}$ F.). Many steps had to be cut on the Bosses; mist, then darkness, came on; and the Grands Mulets was not reached till 10.30 P.M., after a very remarkable and daring enterprise.

We learn also that on January 7 Signor Arturo Eckerlin, with three Alagna guides, crossed the Lysjoch. Leaving the Capanna Gnifetti at 4.50 A.M., they gained the pass at 7.15, but such serious difficulties were encountered on the other side by reason of concealed crevasses that the party were forced to climb over a spur of the Dufour Spitze, and did not reach the Riffel till 8 P.M. and Zermatt till 9.15 P.M. The lowest observed temperature at the hut was -15° C. ($=5^{\circ}$ F.), but on the pass it was -24° C. ($=-10^{\circ}$ F.).

The Wetterhorn was ascended on January 22 by a large party from Meiringen, which started from the Dossenhütte at 6 A.M. and gained the summit at 11.20. On January 21 Herr Joseph Seiler, with two friends and three guides, ascended the Zermatt Breithorn, taking $3\frac{1}{2}$ hrs. up from the lower Théodule hut. Herr Bettschart, of Schwyz, on his ascent of the Titlis on January 17 from the Trübsee hut, had the luck to enjoy a perfect view, and was able to take photographs from the summit, the temperature being -7° R. ($=16^{\circ}$ F.) during the hour and a quarter (2.20 to 3.35 P.M.) spent there.

The winter mountaineering season of 1888 has thus been probably the most brilliant on record.

THE ALPINE PORTFOLIO.—We understand that under the above title it is proposed to issue to subscribers a set of Alpine views, based partly on photographs taken by the best professionals and amateurs, and partly on some to be taken expressly for this work. It is proposed in the first instance to confine the undertaking to the Pennine Alps

between the Simplon and the Great St. Bernard. Should this volume meet with success it is hoped in course of time to extend the series to other districts of the Alps.

The Pennine Alps volume will consist of at least one hundred separate mountain views, printed in the most artistic way in permanent heliotype on the best plate paper, measuring about $12\frac{1}{2}$ by 16 inches. The prints themselves will average about 8 inches by 10. They will be enclosed in a handsome portfolio. The descriptive letterpress, which will include a short description of the district, will be printed on paper of a similar size, and bound in a suitable cover. The views will include many not hitherto published, though in existence in private collections. Mrs. Main, Messrs. Donkin, Duhamel, Sella, Beck, Güssfeldt, Kurz, and others have promised to assist the editors, Messrs. O. Eckenstein and A. Lorria.

It is hoped that the Pennine Alps volume may be published by the end of the present year. The price to subscribers will be five guineas. Names should be sent in at once to Mr. O. Eckenstein, 62 Basinghall Street, E.C. A limited number only of copies will be printed, and will be distributed among the subscribers in order of application.

AN ADVENTURE ON THE MATTERHORN.—The narrow escape from death of Herren Lammer and Lorria on the Matterhorn last August has excited so much interest that it may be well to put on record here Herr Lorria's definitive account of the adventure. The following extracts are taken from an article by him published in the 'St. Moritz Post and Davos News' for January 28, 1888:—

'I fancied the Pointe de Zinal as the object of our tour; but Lammer, who had never been on the Matterhorn, wished to climb this mountain by the western flank—a route which had only once before been attacked, namely, by Mr. Penhall [on September 3, 1879 *], with Ferdinand Imseug and Louis Zurbrücken as guides. . . . We had with us the drawing of Penhall's route, published in the 'Alpine Journal,' vol. ix. . . . After skirting a jutting cliff, we reached the couloir at its narrowest point. It was clear that we had followed the route laid down in the 'Alpine Journal'; and although Mr. Penhall says that the rocks here are very easy, I cannot at all agree with him. . . .

'We could not simply cross over the couloir, for, on the opposite side, the rocks looked horrible: it was only possible to cross it some forty or fifty mètres higher. We climbed down to the couloir: the ice was furrowed by avalanches: these furrows are well shown in a photograph taken by Signor Vittorio Sella, two days after our accident. We were obliged to cut steps as we mounted upwards in a sloping direction. In a quarter of an hour we were on the other side of the couloir. The impression which the couloir made upon me is best shown by the words which at the moment I addressed to Lammer: "We are now completely cut off." We saw clearly that it was only the early hour, before the sun was yet upon the couloir, which protected us from danger. Once more upon the rocks, we kept our course, as much as possible, parallel to the N.W. arête. We clam-

* *Alpine Journal*, vol. ix. pp. 453-457.

bered along, first over rocks covered with ice, then over glassy ledges, always sloping downwards. Our progress was slow indeed: the formation of the rock surface was ever becoming more unfavourable, and the covering of ice was a fearful hindrance.

'Such difficult rocks I had rarely seen before; the wrinkled ledges of the Dent Blanche were easy compared to them. At 1 P.M. we were standing on a level with the "Grand Tower"; the summit lay close before us; but, as far as we could see, the rocks were completely coated with a treacherous layer of ice. Immediately before us was a precipitous ice couloir. All attempts to advance were fruitless, even our crampons were of no avail. Driven back! If this, in all cases, is a heavy blow for the mountain climber, we had here, in addition, the danger which we knew so well, and which was every moment increasing. It was one o'clock in the afternoon: the rays of the sun already struck the western wall of the mountain; stone after stone, loosened from its icy fetters, whistled past us. Back! As fast as possible back! Lammer pulled off his shoes, and I stuffed them into my knapsack (holding also our two ice-axes *). As I clambered down the first I was often obliged to trust to the rope. The ledges, which had given us trouble in the ascent, were now fearfully difficult. Across a short ice slope, in which we had cut steps on the ascent, Lammer was obliged, as time pressed, to get along without his shoes. The difficulties increased; every moment the danger became greater; and already whole avalanches of stones rattled down. The situation was indeed critical. At last, after immense difficulty we reached the edge of the couloir at the place we had left it in the ascent. But we could find no spot protected from the stones; they literally came down upon us like hail. Which was the more serious danger, the threatening avalanches in the couloir or the pelting of the stones which swept down from every side? On the far side of the couloir there was safety, as all the stones must in the end reach the couloir, which divides the whole face of the mountain into two parts. It was now five o'clock in the afternoon; the burning rays of the sun came down upon us, and countless stones whirled through the air. We remembered the saying of Dr. Güssfeldt, in his magnificent description of the passage of the Col du Lion, that only at midnight is tranquillity restored. We resolved, then, to risk the short stretch across the couloir. Lammer pulled on his shoes; I was the first to leave the rocks. The snow which covered the ice was suspiciously soft, but we had no need to cut steps. In the avalanche track before us on the right a mighty avalanche is thundering down; stones leap into the couloir, and again give rise to new avalanches.

'Suddenly my consciousness is extinguished, and I do not recover it till twenty-one days later. I can, therefore, only tell what Lammer saw. Gently from above an avalanche of snow came sliding down upon us; it carried Lammer away in spite of his efforts, and it projected me with my head against a rock. Lammer was blinded by the

* The bracketed words are inserted at the express request of Herr Lorria, in order to explain why he was forced to trust so much to the rope on the descent.—EDITOR.

powdery snow, and thought that his last hour was come. The thunder of the roaring avalanche was fearful; we were dashed over rocks, laid bare in the avalanche track, and leaped over two immense bergschrunds. At every change of the slope we flew into the air, and then were plunged again into the snow, and often dashed against one another. For a long time it seemed to Lammer as if all were over, countless thoughts were thronging through his brain, until at last the avalanche had expended its force, and we were left lying on the Tiefenmatten Glacier. The height of our fall was estimated by the engineer Imfeld at from 200 to 300 mètres (550 to 800 English feet).

‘I lay unconscious, quite buried in the snow; the rope had gone twice round my neck, and bound it fast. Lammer, who quickly recovered consciousness, pulled me out of the snow, cut the rope, and gave me a good shake. I then awoke, but being delirious, I resisted with all my might my friend’s endeavours to pull me out of the track of the avalanche. However, he succeeded in getting me on to a stone (I was, of course, unable to walk), and gave me his coat; and having thus done all that was possible for me, he began to creep downwards on hands and knees. He could not stand, having a badly sprained ankle; except for that he escaped with merely a few bruises and scratches. At length Dr. Lammer arrived at the Stockje hut, but to his intense disappointment there was nobody there. He did not pause to give vent to his annoyance, however, but continued his way down. Twice he felt nearly unable to proceed, and would have abandoned himself to his fate had not the thought of me kept him up and urged him on. At three o’clock in the early morning he reached the Staffel Alp, but none of the people there were willing to venture on the glacier. He now gave up all hope that I could be saved, though he nevertheless sent a messenger to Herr Seiler, who reached Zermatt at about 4.15 A.M.

‘In half an hour’s time a relief party set out from Zermatt, consisting of Joseph Seiler and Oscar Eckenstein, of London, the guides Johann Kederbacher of Berchtesgaden, Joseph and August Gentinetta of Glies, and Joseph Maria Blumenthal of Saas. When the party reached the Staffel Alp, Lammer was unconscious, but most fortunately he had written on a piece of paper the information that I was lying at the foot of Penhall’s couloir. They found me about half-past eight o’clock.

‘I had taken off all my clothes in my delirium, and had slipped off the rock on which Lammer had left me. One of my feet was broken, and both were frozen into the snow, and had to be cut out with an axe. The foreign doctors then in Zermatt wished to amputate both my legs, but, thanks to the skilful advice of Dr. de Courten, I am still in possession of them. My nose and two of my teeth were broken, and I was covered with wounds, and for more than a week I feared that I might lose my eyesight. The journey over the glacier to the Staffel Alp, where Dr. de Courten awaited my arrival, was a terrible business. At 8 P.M. I was brought back to Zermatt, and for twenty days I lay unconscious at the Monte Rosa Hôtel hovering between life

and death. I will not enter into further details concerning my illness, beyond saying that I have not yet recovered entirely from the effects of my accident. My foot did not completely heal in Zermatt; a so-called pseudotrose was caused by the frost bites, which had afterwards to be operated on in Vienna.

'I can never be grateful enough to the Seiler family for all their attention and kindness to me during this trying time. A friend, writing to me from London, most truly remarked: "It must always be a matter of congratulation to you that the accident took place in the Zermatt district, and that you were with the Seilers." I also feel that I can never thank Dr. de Courten sufficiently for his skilful treatment of my case.'

Herr Lorria thus sums up his impressions:—

'Many an Alpine climber going without guides has paid for his daring love of mountains with his heart's blood. And this has happened more than once in recent years. People even went so far as to maintain that most accidents are caused by the want of guides. It was true, we had no guides! But to attribute our accident to this cause would be utter folly. Eminent guides had been over the same route we had chosen. One cannot see the ice on the rocks from below with a telescope. At the point from which we turned back every good guide would have turned, and lower down there was but one choice to the climber, be he guide or traveller—either to endure the falling stones for seven hours, or else to risk the passage of the couloir, which was not a very wide one. I am sure that no guide would have failed in deciding on the latter course. It is improbable that a guide could have extricated himself from the difficulty as well as Lammer did, and even if he had done so none could have accomplished more than Lammer.

'The lesson to be learnt from our accident is not, "Always take guides," but rather, "Never try the Penhall route on the Matterhorn, except after a long series of fine, hot days, for otherwise the western wall of the mountain is the most fearful mousetrap in the Alps."'

THE EIGER BY THE MITTELLEGI ARÊTE.—Among the Alpine problems of the Bernese Oberland there is none which is more exasperating than the Eiger by the Mittellegi arête. This ridge is very well seen from the valley of Grindelwald, and appears from a distance (save from the direction of the Gross Scheidegg) comparatively easy, but it long defied the most determined efforts of many parties, consisting of well-tried climbers and first-rate guides. It was, therefore, with considerable interest that the news was received that an Austrian climber, Herr Moritz v. Kuffner, had, in 1885, succeeded in forcing it downwards, starting from the summit of the peak. His narrative has, however, only very recently appeared, and may be read in Nos. 235 and 236 (January 13 and 27, 1888) of the 'Oesterreichische Alpenzeitung,' from which we take the following particulars. Herr v. Kuffner, with Alexander Burgener, A. Kalbermatter, and J. M. Biener, made a first attempt on July 29, 1885, starting from the Eigerhöhle. On this occasion the party, so Herr v. Kuffner thinks, reached a more westerly point on the ridge than any of their predecessors, even than Mr. Maund

on July 31, 1881; but having reached the very foot of the great wall which towers above the 'gendarme,' or sixth tooth, they could not see any way *up* it. The thought struck them that it might be possible to come *down* it, and so they returned to Grindelwald, leaving a rope on the E. side of the 'gendarme' to be used on their future undertaking (Mr. Maund's rope was found on the *fourth* tooth, which is not the well-known 'gendarme,' according to Herr v. Kuffner, who pays a high compliment to Mr. Maund's spirited narrative of his gallant attempts printed in Vol. xi. of this Journal). On July 31, 1885, the same party (with the addition of a young Grindelwald porter named **Baumann**), starting from the Kl. Scheidegg a little after midnight, reached the summit of the Eiger by the usual route at 7.20 A.M. Here, Herr v. Kuffner informs us, the young porter 'who had come so far, whether merely for his own satisfaction or on other grounds I know not,' was left 'to wait for a party which was coming up after us.'

Herr v. Kuffner and the three others left the summit at 8.10, and passing along a narrow rock ridge with a great coping of snow on the left, gained at 9 the edge of the great rock wall which falls towards the 'gendarme.' A flag was hoisted here which was seen from Grindelwald, whence their progress during the rest of the day was followed with the closest attention. The first bit of the descent was not difficult, but matters soon changed, and at 10.45 they came to the first of the 'places on which we let ourselves down by the rope.' This proved, perhaps, the most difficult bit of the entire descent, as the foothold was very bad. Three in turn were let down holding on to the doubled slender rope (which was fixed to the rocks) and tied to a Manila rope, Burgener (the last man) helping himself by a rope which he had secured above, while the others held the end below. This process was repeated, and finally, after many difficulties, they succeeded in reaching, at 1.45 P.M. (after 4¾ hours' work), the deep depression in the ridge just W. of the great 'gendarme.' The rocks are described as 'very rotten, but throughout that day dry and warm.' As they had taken a very small amount of provisions with them (and these were already consumed), and as their cigars had been broken to pieces during the clamber down, there was no reason for a prolonged halt. The rest of the way was, of course, already known to them. At 7.15 P.M. they left the arête, and, descending to the Kallifirn, succeeded by the light of matches (for their candles had, like the cigars, been broken in the course of the day), in reaching the Eigerhöhle, where they spent a wretched night without blankets or food, save a soup prepared by Burgener from the bits of tobacco, salt, pepper, candle, and dust, which he shook out of his knapsack, added to a little water. But this soup was not all consumed, the adventurers preferring to warm themselves by a fire made of some stray logs of wood before stretching out their weary limbs on the bare rock, which was hard but dry. The weather broke next day, and they reached Grindelwald in torrents of rain at 8 A.M.

Herr v. Kuffner expressly states that his party did *not* solve the Mittellegi ridge problem, for they did not ascend the ridge. The descent, he thinks, might, perhaps, be made without ropes, but it would be 'uncommon difficult and dangerous.' He holds that the

expedition (as it was actually made) is not a dangerous one for first-rate climbers; but since it is necessary to pass along a high and exposed ridge for many hours, fine, settled weather is essential. Herr v. Kuffner thinks they had too much rope with them—100 mètres (= 328 feet) of a rope 'rather thicker than a pencil,' 30 mètres (= 98 feet) of silk rope, besides two Manila ropes of 'the usual length.' We gather that the 100 mètres rope was abandoned below the difficult bit described above.

THE GROSS VIESCHERHORN.—In my paper published in the '*Alpine Journal*' for November last (p. 381) I pointed out that the actual summit of the Gross Viescherhorn does *not* lie on the boundary ridge between Bern and Valais, but a little to the south of it. On communicating this fact to Herr X. Imfeld, the well-known Federal engineer, he informed me that my statement is quite correct; but that, as the distance from the summit to the boundary ridge is apparently only from 20 to 30 mètres (66 to 99 feet), it would on the Siegfried map (scale 1 in 50,000) be represented by a line from 0.4 to 0.6 millimètre in length, and could scarcely be indicated there.

The distance thus is far less than that between the Grenzzipfel and the Höchste Spitze of Monte Rosa (clearly shown on the Siegfried map). Strictly speaking, however, Monte Rosa is in Switzerland, and the Gross Viescherhorn in Valais. In the case of the Gross Viescherhorn, the distance from the frontier line is so small that Mr. Moore's statement, on the occasion of the first ascent of the peak in 1862,* is quite justified:—'Looking north, at our feet, at the base of a precipice so sheer that, to all appearance, a stone dropped from where we were sitting would have fallen clear for thousands of feet, was the Lower Grindelwald glacier.'

A. LORRIA.

EARLY NAMES OF THE LYSKAMM AND WELLENKUPPE.—The old name 'Silberbast' for the Lyskamm has almost been forgotten. Herr Studer † says that it has a foreign sound, and could not, therefore, last long. Yet the word 'Bast' must be familiar to many visitors to Zermatt, for it is applied in the local dialect to the wooden saddles of the pack-mules. It does not require a great deal of imagination to suppose that the name 'Silberbast' was given to the Lyskamm because, seen from the Gornergrat, it has the appearance of a huge snowy pack-saddle, and the name is therefore very appropriate.

I ascertained last summer from an old peasant that the original name of the Wellenkuppe was 'Weisskopf.' Herr X. Imfeld, who was charged with the survey of that group for the Siegfried map, was unable to find out the name of the peak, and therefore simply indicated its height, 3,910 mètres. I have drawn his attention to the name 'Weisskopf,' and he will cause it to be inserted on the Federal map. All who have seen the peak from the slopes above Zermatt will agree that 'Weisskopf' describes its appearance admirably. The name 'Wellenkuppe' seems to have been given by Mr. Conway in the '*Zermatt Pocket Book*' (p. 114) before he made the second ascent of the peak in 1881.‡

A. LORRIA.

* *Alpine Journal*, vol. i. p. 243. † *Ueber Eis und Schnee*, vol. ii. p. 63.

‡ *Alpine Journal*, vol. x. p. 359.

THE DÜRRENHORN BY THE N.W. FACE.—The following details supplement the mention of this ascent in 'Alpine Journal,' xiii. 412. Starting from the Hohberg Cave at 3 A.M. on July 30, 1887, Herren Lammer, Lorria, and Kellerbauer parted company with Mr. Eckenstein on reaching the W. ridge of the peak, and descended to the Dürrenfad. Keeping then along slopes of *débris* close under the W. ridge, they gained the left bank of the Dürren glacier and crossed it to a couloir leading straight to the summit. This couloir was reached after cutting from one hundred to one hundred and fifty steps in snow and climbing up some iced rocks. Striking to the left the party traversed to a second, then to a third couloir, and in this way attained by iced and rotten rocks with great difficulty the N. snow ridge, whence a few steps led them to the summit of the peak, at 1.45 P.M. Starting again at 2.55 they descended easily to the Hohberg Pass, and thence went down from a point a little to the W. of the pass to the Gassenried glacier, meeting with some difficulties on the way, the route taken lying mainly along a rock rib which projects far into the ice wall. The party then proceeded to the Galenjoch, where at 8.40 P.M. they rejoined Mr. Eckenstein.

The Galen Pass, and in fact the glaciers generally of the Nadelgrat, have changed very much since 1886, the pass being much less troublesome on the Gassenried side. The four gentlemen above named are inclined to believe that Sommermatter and Brantschen in 1863 did really cross the Hohberg Pass itself, and not the Galen Pass, as the great snow or ice slope leading to the former varies much from year to year, and the pass may always be reached by the rocks without touching the snow wall.

THE CENTENARY OF DE SAUSSURE'S ASCENT OF MONT BLANC.—In many respects the ascent of Mont Blanc by de Saussure on August 3, 1787, though but the third in order of date, was more important than those made previously. The French Alpine Club, therefore, fitly organised a fête on the occasion of the centenary of his ascent, though the Federal Marksmen's festival at Geneva and the Congress of the French Club in the Vosges caused the celebration to be delayed till August 28. The weather was very propitious, and all seems to have passed off well. The event of the day was the unveiling of a statue of de Saussure and Jacques Balmat executed by M. Salmson, and shown at the last Salon. It is now erected on the 'place' before the Hôtel Royal, which is to be henceforth known as the 'place de Saussure.' The chief speaker at the unveiling ceremony was M. Spuller, the Minister of Public Instruction, whose oration was much applauded. It aimed at showing how each of the two heroes of the day helped each other in the conquest of Mont Blanc, and its pith is summed up in one phrase, 'La science a servi l'adresse, et l'adresse a servi la science.' Later in the day a banquet of over two hundred covers took place at the Hôtel Couttet. Among the congratulatory telegrams read was one from the President of the Alpine Club. The Club itself was not officially represented, but a former member, Mr. W. C. Sidgwick, made an excellent speech. The streets of Chamonix were lavishly decorated with garlands and arches, and bands of music abounded, while at night

there was a torchlight procession and illuminations (even at the Grands Mulets) and fireworks. The only drawback to the general success seems to have been the excessive heat of the day. An interesting fact was the presence of Monsieur J. Vallot, who had just spent sixty hours on the summit of Mont Blanc making scientific observations, thus falsifying a prophecy of de Saussure (appositely cited by Monsieur C. Durier in his speech): 'Je conservais l'espoir d'achever sur le Col du Géant ce que je n'avais pas fait et que vraisemblablement on ne fera jamais sur le Mont-Blanc.' We note, too, that one of the present members of the great savant's family assisted at the fête.

VALLOMBROSA AND THE PRATO MAGNO.—Milton has given the name of Vallombrosa a 'musical charm' to English ears, and another of our great poets, Wordsworth, has, in some deservedly less known and rather hymn-bookish stanzas, recorded his visit to the convent, and paid his tribute to his predecessor. Mr. Story, the American sculptor, whose son-in-law now owns and often inhabits the Medicean villa *Al Lago*, a mile or two from the convent, has written a pleasant little book about his summer retreat.* But still comparatively very few of the English visitors to Florence realise the charms of the spot, or how easy it is to reach it. It is a four-hours' drive direct from Florence, or 2½ hrs. from the station of Pontassieve. The old strangers' house of the convent has been turned into a capital inn; the convent itself into a School of Forestry. Its height is 3,140 feet.

Wordsworth describes the situation with perfect accuracy:—'I had expected, as the name implies, a deep and narrow valley overshadowed by enclosing hills, but the spot where the convent stands is, in fact, not a valley at all, but a cove or crescent open to an extensive prospect. In the strangers' book I read the notice in the English language that if anyone would ascend the steep ground above the convent and wander over it he would be abundantly rewarded by magnificent views. I had not time to act upon this recommendation, and only went with my young guide to a point nearly on a level with the site of the convent that overlooks the vale of the Arno for some leagues.'

It appears that even a poet before railways was not exempt from the superstition current among travellers that 'they have not time'! I and my children found leisure to follow out the recommendation of the unknown Englishman, which Wordsworth preserved, if he did not profit by. A road leads to the spot (10 min. from the monastery) to which Wordsworth was taken. Here stand an old hermitage and a great modern villa. 'Some leagues' is a very inadequate description of the view. It extends down the Arno valley as far as the peaks of Carrara, behind which the sun is wont to set in purple splendour. Hence a fair walker can follow the top of the crest that embays the monastery, mounting steadily till, where a horse-path crosses the ridge, he reaches the foot of a steep hillside. Climbing the slope, he will, after a stiff short pull, find himself on the crest of the Prato Magno (5,200

* See Story's *Vallombrosa*. London, 1881. Travellers who propose to visit Vallombrosa or the sanctuaries of the Casentino may also consult with advantage Professor Bertini's *Dimore Estive dell' Appennino Toscano* (Florence, 1884).

feet), a noble Apennine which stretches for miles between the upper and middle valleys of the Arno, filling the centre of the great bend of the river, and overlooking the Casentino to the 'gran giogo' of the Central Apennines. The views in every direction are most beautiful, and worthy of the heart of Italy. Westwards, near the foot of the mountain and between it and the Arno, is seen a very strange district of clay-hills, weather-worn into most fantastic shapes, which may account for many of the otherwise unintelligible backgrounds of the early Florentine school. When morning mists are mixed up with the serrated ridges the effect is almost extravagant, and would certainly be thought altogether so in a picture. The return may be shortened by taking the horse-path already mentioned, a deep furrow filled in the first days of November knee-deep with the brown leaves of the beech-woods. The pine-forest which surrounds the convent is an exotic introduced by the monks, and, like most artificial creations, does not (to my taste, at least) agree with the scenery so well as the chestnuts and beech-woods native to the spot. The Italians, however, find a great charm in its singularity and healthiness.

D. W. F.

REVIEWS AND NOTICES.

Reise in den Andes von Chile und Argentinien. Von Paul Güssfeldt. (Berlin: Gebrüder Paetel, 1887. Pp. 480. 18s.)

Bericht über eine Reise in den centralen chilen-argentinischen Andes, von Paul Güssfeldt (Sitzungsbericht der physikalisch-mathematischen Classe der Königlich Preussischen Akademie der Wissenschaften zu Berlin vom 24. Juli 1884).

IN modern times no exploration like this has been made of the Andes chain, combining mountain climbing with skilled topographical observation. When Mr. Whymper in 1880 ascended Chimborazo, he was with skilled Alpine guides and in a known district, but in the present case both of these essentials were wanting. When Herr Güssfeldt formed the design of exploring the Chilian Andes we need not enquire how far the desire of throwing light on a little known district which he sets forth in his preface was mingled with the ambition of conquering a new mountain world. Along with the well-known guide Alexander Burgener, Herr Güssfeldt reached Valparaiso on October 15, 1882. Burgener was ill on the voyage, and on reaching land had to go into the hospital. A week later Herr Güssfeldt was surprised to learn at Santiago that Burgener wished to return to Europe. Other causes (to which Herr Güssfeldt does not refer) than indisposition contributed to this resolution of Burgener. The loss of such a man was a severe blow to Herr Güssfeldt's expedition, and it probably contributed greatly, if not entirely, to the failure of his great ascent. Our interest in Herr Güssfeldt's explorations is concentrated chiefly on the ascent of Maipo and the two attempts on Aconcagua. And this not on account of rock or glacier difficulties to be overcome (for these were conspicuous by their absence), but on account of the great height of the peaks. But before referring to these we must briefly describe

the expeditions which Herr Güssfeldt undertook. He had no reliable information about the mountain region. The only map of Chili available, that of Francesco Piffis, though trustworthy in the plain country, was, as regards the Andes range, a work of fancy, and he declined to take it with him. The plan which he adopted was to cross the chain of the Western Cordillera between Chili and the Argentine Republic, as often as possible, in order to take observations of various kinds where practicable, and also to ascertain the position of their highest summit, and if possible to ascend it. His difficulties in preparing for his explorations were smoothed over by the assistance of two friends, Don Olegario de Soto, a rich landowner at Cauquenes, and Karl Hess, the landlord of the bathing establishment at the same place. He made a trial trip (December 8–22) up the Cipreses valley. At the head of this he found an extensive glacier, which he explored and mapped, naming it the Ada glacier. Curiously enough, this was the only great glacier seen during his explorations; and he ascribes the fact not so much to climatic conditions as to the want of suitable basins for the retention of the snow-fall. The greatest height reached was 3,526 mètres (= 11,568 feet). Herr Güssfeldt on this expedition showed the Huasos, his native companions, what a mountaineer could do, and they in turn astonished him by the climbing capabilities of the horses and mules. He declared that these animals in the Andes were the real mountaineers. Similar evidence is given by Mr. Freshfield in the November number of the 'Alpine Journal,' where he says it would be a mistake to suppose that the Suanetians were mountaineers because they lived in the mountains, and remarks that on the Noshka Pass* the horses (certainly without loads) got up places where a man must use his hands. Herr Güssfeldt found that, owing to the prevalence of continuous high winds, it was not possible to make use of a tent, and that his bivouacs must be in the open, with only the protection of the low walls which the Chilians are clever in building. The general impression which he formed from what he saw of the main chain was that of a series of rugged peaks mounted on vast table-shaped masses of rocks, giving the idea of inaccessibility, with vast couloirs and enormous cones of detritus. Later he says, speaking of the view from Maipo, 'All the peaks I saw in the main chain appeared inaccessible.' This he did not in any case put to the proof, as neither Maipo nor Aconcagua are exactly in the main chain. He returned from this expedition to Cauquenes on December 23.

His friends again spared him the labours of preparation, and he started on January 1, 1883, with three natives and eighteen horses and mules. Of the natives, only Zamorano, a man sixty-three years of age, had been as far as the first pass. Advancing up the Cajon † de la Lena, on the third day they reached the Atravieso ‡ de la Lena (4,107 mètres = 13,475 feet). At one point forty steps had to be cut in a snow bed to enable the animals to pass, and, loaded heavily as they were, they reached the top with much difficulty. On the other side matters were worse. A long and somewhat steep snowslope led down to the level.

* *Alpine Journal*, vol. xiii. p. 373.

† Cajon = valley.

‡ Atravieso = pass.

Down this slope two of the mules, carrying the most delicate instruments, slipped; but fortunately nothing was broken. They were now in the region between the two parallel ranges of the Cordillera. The district was volcanic, and the slopes of black lava contrasted strangely with the snows of the Cerro Overo (4,740 mètres = 15,551 feet). Here they had to pass an extensive 'Kerzenfeld' (candle-field). Under the action of sun and wind the surface of the snow is broken into numberless small pinnacles, often exceeding a man's height, and so close that a horse can hardly pass between them. The pinnacles often assume the most fantastic shapes, and were aptly likened by the Huasos to white-robed penitents: 'Nieve de los Penitentes.' In Chili this formation seems frequently to take the place of glaciers. Another high pass, La Iglesia (3,638 mètres = 11,936 feet), was crossed into the head of the Rio Negro valley, a branch of the Rio Diamante, which breaks through the East Cordillera in a gorge not much exceeding 2,000 mètres (= 6,500 feet) above the sea. Following the courses of these streams, they descended to the point where the Rio Diamante enters the Pampas. This was the most southerly point reached by the expedition ($34^{\circ} 42'$ S. lat.; $69^{\circ} 27'$ W. long.). Here the Rio Diamante was crossed with some difficulty (1,428 mètres = 4,685 feet), and they advanced northward across the undulating slopes of the Pampas to the Rancho Yaucha (1,443 mètres = 4,734 feet). This was their most easterly point ($34^{\circ} 8'$ S. lat.; $69^{\circ} 9'$ W. long.). Here Herr Güssfeldt was delayed two days by having to send to S. Carlos, thirty miles distant, for a permit to cross the frontier. On January 16 they advanced up the Yaucha valley, and the next day crossed the Eastern Cordillera by two passes—the Atravieso de la Cruz de Piedra (3,781 mètres = 12,405 feet) and the Atravieso de la Laguna (3,741 mètres = 12,274 feet). From the latter a wonderful view was obtained of the extinct volcano Maipo (5,400 mètres = 17,717 feet), with the blue Lago del Diamante in the foreground. As evening closed in they crossed the Western Cordillera by a third pass (3,473 mètres = 11,395 feet), so gentle that a traveller might cross it without knowing, and bivouacked (3,306 mètres = 10,847 feet) under the shadow of the great mountain. The ascent of Maipo was determined on, and on January 19 Herr Güssfeldt started at 2.20 a.m., accompanied by Zamorano and Francisco. At 6 a.m. they reached the plateau on the W. side of the Maipo crater, whence vast snowslopes extended to the summit. Here they were exposed to the full force of a raging N. and N.W. wind. Zamorano pointed to the summit and said, 'Impossible!' Francisco cowered down behind a stone and Zamorano joined him. After an hour spent in exhortations they went forward, over snowslopes of not more than 20° inclination, broken here and there by lava strata. Herr Güssfeldt advised them to walk slowly but steadily without halts, and put Zamorano in front. For some time he went very well, but when he showed a tendency to make frequent halts Herr Güssfeldt went in front himself. The neighbouring mountains began to sink below them. On looking round he saw Zamorano far behind, and Francisco about halfway between them. The next time he looked, Zamorano had stopped altogether. It was no wonder, for the

Cerro Overo (4,740 mètres=15,551 feet) was nearly on a level with them, and he was sixty-three years of age. Francisco came up very pale, and, complaining of pains in the legs, Herr Güssfeldt relieved him of his load and they went on; but at 12.30 P.M. Francisco gave up altogether. At 1.30 Herr Güssfeldt without difficulty reached the summit. There was a raging hurricane. With much trouble he secured a boiling-point observation. The summits of the main chain which he saw appeared all to be inaccessible. Their general appearance he compares to that of a house with a steeply-pitched roof broken into strange pyramidal forms, in whose rifts were small broken glaciers never reaching the valley level. At 2.45 P.M. he left the summit. Nothing was to be seen of Francisco. At 4.15 he rejoined Zamorano, and together they reached the bivouac at 7.30 P.M. Two hours later, to their great joy, Francisco appeared. After resting, he had followed on and climbed the second summit, but saw nothing of Herr Güssfeldt, who had already left the higher one. The Huasos were delighted with a present of 10 pesos (about 35 shillings) each, and well deserved it, for their performance was a remarkable one. The descent to S. José, which they reached on January 22, resembled that from the Alps into Italy. Thence they turned southward to the baths of Cauquenes, which seemed like a home. From this place Herr Güssfeldt sent the report of his first journey to the Royal Academy of Sciences at Berlin, which had granted him funds for this exploration.

But his thoughts were fixed on his more important journey yet to come in the district of Aconcagua. For this he went on February 8 to the Hacienda of Vicuna, above S. Felipe. Here he was much worse served than at Cauquenes, and only the kindness of a friendly farmer, Don José Thomas, enabled him to start on February 15. Their route diverged from the Putaendo Valley at La Guardia to cut off a great bend of the river, which was rejoined by the Cuzco Pass (3,600 mètres=11,811 feet). Thence across the west chain into the Valle Hermoso by the Boqueta Pass (3,490 mètres=11,450 feet). In descending from this pass he gained the first view of the great mountain seen to S.S.E. along the Valle Penitente; and the sight filled him with mingled fear and longing. It rose far above the surrounding mountains. The upper part seemed easy, but a girdle of vast precipices below seemed to defy all access. On February 18 they bivouacked in the head of the Valle Penitente, and next day advanced to the foot of the precipices. A couloir was soon discovered, which would enable them to pass the barrier. It was steep, and mostly filled with rubbish, but here and there the bare rock appeared. Going fast, he reached in 1½ hours the summit of the couloir, the 'Portezuelo del Penitente.' Before him was a great field of 'nieve penitente;' but it was plain that when this was once crossed no further difficulty lay before them. He determined to make the ascent continuously, and, fortunately for this purpose, it was full moon. On February 20 they left the bivouac at 4 P.M. and rode to the foot of the couloir, which was reached at 7 P.M. Here they made a long halt. At 8.30, with the Huasos, Filiberto and Vicente, he began the ascent of the couloir by moonlight. The top was reached at 10.30. The passage of the snow

bed, whose width was estimated at more than 3 kilomètres, gave some trouble, but at 1.50 A.M. they were fairly on the mountain at a height of 5,000 mètres (=16,405 feet), with 1,970 mètres (=6,464 feet) yet to climb. The ascent continued over monotonous slopes, Herr Güssfeldt walking very slowly to husband his strength. After ascending about 400 mètres (=1,312 feet) the Huasos began to complain, and said they should freeze. The cold was in fact severe (-10° Cent.= 14° Fahr.), but the wind was never so violent as on the Maipo. However, they all went on slowly. Between 8 and 9 a long halt was made. At 10 they had reached a height of 6,200 mètres (=20,342 feet). Here Vicente gave up completely, complaining of pains in the legs. They had then taken 8 hours (including halts) to ascend 1,200 mètres (=3,937 feet). The others went slowly on over monotonous, seemingly endless slopes. There was no difficulty in the ground, but they both felt increasing discomfort. The halts increased in frequency and duration, and the breathing became short. Herr Güssfeldt had recourse to regurgitation to relieve the uneasy sensation, and found the greatest relief when he did this with his face close to the snow. At 11.30 Filiberto complained of pains in the legs, and wished to return, but at Herr Güssfeldt's earnest remonstrances he still went forward. At 12.30 P.M. they had reached an estimated height of 6,560 mètres (=21,523 feet). Here they made a long halt. During this, clouds suddenly gathered on the summit; a snowstorm surprised them, and they were compelled to return at 1.30. The descent was at first very rapid, but the passage of the snow, which resembled a roughly-ploughed field, was wearisome. The Portezuelo was reached at 7 P.M., and the bivouac at 11 P.M. Between February 24 and March 3 an expedition was made to the Valle Hermoso, and Herr Güssfeldt ascended the Espinazito Pass (4,444 mètres=14,581 feet). Here he measured some high peaks of the Ramada chain exceeding 6,000 mètres (=20,000 feet). One photograph taken here exhibits in a remarkable way the 'nieve penitente' formation. Returning on March 3 to the Aconcagua bivouac, he resolved to try the ascent once more, and this time to bivouac on the mountain as high up as possible. He made extraordinary preparations to defend himself and his companions from the cold. On March 4 they started at 10 A.M., and at 12.45 P.M. were at the foot of the couloir, and reached the Portezuelo at 3.20. The passage of the snow was made between 4 and 6.50 P.M., and forty-five minutes later they found a suitable place for a bivouac at a height of 5,300 mètres (=17,390 feet). No fire could be made; the three had to squeeze into a sleeping-bag for two, and they passed a miserable night. Added to all, Herr Güssfeldt had a raging toothache. In the morning he had great trouble to make the Huasos turn out, but they started on March 5 at 6.40 A.M. To enumerate all the times of their marching and halting would be tedious. Between 6.40 A.M. and 12.20 P.M., a period of 5 hrs. 40 min., no less than twelve halts were made, amounting in all to 2 hrs. 7 min. The last was occasioned by a snowstorm, which again drove them back. The length of these halts varied from two minutes to half an hour. How many of these might have been avoided had Herr Güssfeldt had companions of skill and determination equal to

his own we cannot say. The strength of a chain is measured by its weakest part, and it is highly probable that the want of practice and timidity of his native companions contributed largely to these delays. Herr Güssfeldt states that the pains in the limbs commenced directly after the first halt, and that all the symptoms were felt most severely when starting after a halt. He considers that they arise from the increased action of the lungs reacting on the physical powers, and that the moral strength resulting from feeling oneself well supported would conduce greatly to conquer these discomforts, if it would not remove them altogether. The whole party suffered much more than on the previous ascent. Descending, they reached their bivouac at 1 P.M., the Portezuelo at 5, and the camp at 8.15 P.M. Herr Güssfeldt doubts whether even in fine weather they would have reached the top. Disappointed as he naturally was at the failure of his two attempts, he had the satisfaction of feeling that the veil of mystery which hung over the mountain had at length been removed, and the route made plain to ascend it. On March 8 they quitted the camp, and the expedition returned by the Boqueta Pass and the Putaendo Valley to the Hacienda Vicuna. Herr Güssfeldt made one more passage of the chain by the Cumbre Pass (3,760 mètres=12,336 feet) to the Baños del Inca. Thus, on the whole, he crossed the main chain three times each way. He ascertained the position of fourteen points astronomically, determined trigonometrically the height of fourteen peaks, and hypsometrically the height of upwards of 140 places. He deserves the gratitude of the Chilean Government for the aid which his observations will give in preparing a future map of Chili. Three maps of the explored districts, compiled mainly from Herr Güssfeldt's observations, are annexed to this work, as well as twenty excellent photographs taken by himself, which enable us much better to appreciate the character of the mountain scenery in the Andes. It is only to be regretted that they are inserted in the book, in order, certainly, but without any reference to the text relating to them.

With regard to the height reached by Herr Güssfeldt and his experiences on Aconcagua, we cannot refrain from making some comparisons with the ascents, in the Himalayas, made in the summer and autumn of the same year by Mr. W. W. Graham.* On March 31, 1883, Mr. Graham, with the Swiss guide Imboden, after camping out at upwards of 17,000 feet (+8° Fahr. = -13° Cent.), reached a height exceeding 20,000 English feet. Later, accompanied by Mr. Emil Boss, of Grindelwald, and the guide Ulrich Kaufmann, after camping out at 18,400 feet, he attained the height of 22,700 feet on Dunagiri (July 10). On September 30 they camped out at 18,300 feet, and on October 1 ascended Juponu (21,300 feet) by a very difficult ascent. On October 7 they camped out at 18,500 feet, and next day ascended Kabru (24,000 feet), the last slope being very steep—in fact, steeper than anything they had seen in the European Alps. On all of these excursions, which involved much difficulty and hard work both on rock and glacier, Mr. Graham and his companions experienced no inconvenience save the panting in-

* *Alpine Journal*, vol. xii. pp. 36-51.

separable from great exertion. This is a strange contrast to Herr Güssfeldt's experiences, especially when we consider that in the ascent of Aconcagua there were no serious difficulties of any kind, the slopes being mostly very gentle. In so brief a notice as this it is impossible minutely to examine into the causes of so great a difference. We can hardly suppose it lay in the position of the ranges (one being 28° – 29° N. lat. and the other 32° – 33° S. lat.), or in the difference of the constitution of one explorer from that of the other. More probably the reason is to be sought in a variety of causes, of which not the least (as Herr Güssfeldt himself suggests) lay in the want of one or more companions (such as Alexander Burgener would have been) enterprising and experienced in Alpine ascents. Add to this the difficulties Herr Güssfeldt had with his untried companions, the insufficient provisioning, the effects of loss of sleep and of exposure in the night bivouacs (the temperatures in summer in 33° S. lat. seem to be disproportionately lower than in 29° N. lat.) at great elevations, especially on the second attempt, and we need not wonder at his failure. We must rather admire the energy which succeeded in carrying his native companions with him to so great a height.

J. S.

Zeitschrift des Deutschen und Oesterreichischen Alpenvereins. Band xviii.
(München, 1887.)

The greater part of this volume consists of essays on Alpine matters which it would require a special acquaintance with the subjects treated of to comment upon. Dr. Penck writes on the Brenner Pass, its origin, geology, climate, history, &c. He seems, however, to write more from the study of the map than from personal acquaintance with the district, since he supposes it possible to pass at a level of 2,000 mètres from the Schlüssel Joch over the Valsér Thörl (2,232 mètres) into the Venna Thal, thus falling into a strange confusion of names and places. Dr. Bidermann has a similar article on the Hoch Pusterthal, referring more especially from the tourist's point of view to its numerous bathing establishments and their special advantages. Dr. A. Greil gives an historical notice of the Schnalser Thal. Of glacier treatises there are three: one by Dr. Pfaundler on the present limits of the Alpeiner Ferner, and another by Drs. Finsterwalder and Schunck on the Sulden Ferner. Both these surveys were made in August 1886, and are each accompanied by a careful map of the ground surveyed. To the latter is also appended a drawing of the Sulden Ferner in 1818, when it was nearly 2,000 mètres ($1\frac{1}{4}$ miles) in advance of its present position, and only three to four hundred paces from the Gampenhof. The movements of the Sulden Ferner seem to be very erratic and not to conform to any of the usual conditions. At the time of its furthest advance the rate of its motion was remarkable, being no less than 1.92 mètres ($6\frac{1}{4}$ ft.) per day. Dr. Seeland contributes another chapter (No. VIII.) on the Pasterze Glacier.

Herr Waltenberger writes on Mountain Surveying, with a special reference to the Berchtesgaden district. The survey of this is being carried on under the patronage of the D. und Oe. A. V. Two sheets,

Ramsau and Watzmann, are annexed to the volume. However accurate they may be, the effect on the eye is not pleasing.

Herr Obermair discusses the degree and the methods by which tourists unprovided with special instruments may, by simple means, make useful observations in their excursions. Dr. C. Partsch writes on the human foot, and makes many useful remarks, especially one that it is no use for a man to wear suitable boots for one month in the summer if he spoils his feet by bad boots the rest of the year. Dr. Lieber gives a series of useful directions on the necessary steps to be taken in the case of illness or accident on mountain excursions; insisting most strongly, and very properly, that prevention is better than cure.

Dr. von Dalla Torre gathers together the old legends of dragons and serpents. From the instances which he quotes it might be supposed that the legendary dragon was a compound of newt and badger. The creature described as a 'Drachen' in one instance (p. 218) could hardly be anything else than a badger. The drawing (from some old picture) of a 'Stoll (pit) worm' seems also to point to this conclusion. It is strange that in a country where snakes seldom exceed five feet and reptiles one foot in length, such stories should have arisen.

Herr F. L. Hoffmann gives a second series of extracts from the diary of the 'Frühmesser' of Martell, concluding with an interesting account of the interview of the Tyrolese peasant of Naturns with the King of Bavaria in 1809, and what the 'Sandwirth' thought of it. Herr H. Hoffmann writes on the rationale of Alpine climbing.

Then we have a monograph by Herr Geyer on the Todtes Gebirge. Herr Anton Spiehler in a second chapter on the Alps of the Lechthal recounts a number of ascents, the most interesting of which are the first ascent, August 17, 1885, of the Bergwerkakopf (2,726 mètres = 8,943 feet) between the valleys of Starkenbach and Lorsenn, accessible only by a perpendicular climb of ten to twelve feet into a narrow 'Rinne,' and of the Schlenkerspitze in Fundeis, N.W. of Imst, by a series of gullies and narrow ledges. Herren Purtscheller and Reichl repeated both of these ascents alone in 1886. The Memminger section of the D. und Oe. A. V. to which Herr Spiehler belongs, besides building a hut in the Parseyer Thal at the height of 2,250 mètres (7,382 feet), has constructed a path leading over the ridges E. of and close under the Parseyerspitze (3,021 mètres = 9,908 feet) to the Augsburg hut. They intend to construct other paths along the ridge to the Muttenkopf. The mountain range S. of the Lechthal lends itself easily to this, there being no great depression in the ridge E. of the Parseyerspitze. The section has also marked the routes over the passes in all directions. This habit of marking ways has now reached to such a pitch that the tourist has seldom, on ordinary routes, any chance of finding out the way for himself, and the pleasure of mountain walking must to many persons be considerably lessened.

Herr Kilger commends to the notice of tourists the much neglected district of the Mieminger Gebirge, lying between the Zugspitze and the Innthal, and describes a picturesque route by the Drachensee and

Siebensee over the Grünstein Scharte (2,271 mètres = 7,481 feet). The views of these lakes exhibit some very wild scenery.

The other articles relate to special ascents.

The ascent of the Pic de Néthou in the Pyrenees (3,404 mètres = 11,168 feet), by Herr C. Diener, without guides, possesses no special interest except that he and his friend were charged 14 francs for a night's lodging in the Cabane de la Rencluse. This seems even to exceed the charges at the Grands Mulets.

Frau Tauscher-Geduly describes an ascent of the Gross Litzner (3,108 mètres = 10,297 feet, in the Silvretta group), on August 9, 1886. This was the fourth ascent of this very difficult mountain. The guide, Christ. Jann, has always led on these ascents. Unfortunately, at a critical point where they had to pass round a bulging rock above a precipice, the lady's arms were not long enough to reach the handholds, and she was forced to remain behind. She offers some explanation of the nomenclature. Two mountains of very unequal difficulty are both called, on the Austrian side, Gross Litzner. The one to the N., rising from the Litzner glacier, is the true Gross Litzner; the other rises from the See glacier, and is properly named Gross Seehorn (3,124 mètres = 10,356 feet). Herr Purtscheller, on September 5, 1866,* ascended the latter, and was surprised by the ease of the ascent and the grand appearance of the true Gross Litzner. To this paper is annexed a photograph of the Seehorn group from the Cromerthal.

The well-known mountaineer, Dr. Guido Lammer, prefaces an ascent of the Gross Venediger (3,673 mètres = 12,051 feet) by an account of the early ascents, especially that attempted by the Archduke John in 1828; and he describes the different routes by which the mountain was successively ascended. Dr. Lammer slept in the Kürsinger hut (2,656 mètres = 8,714 feet), and on September 7, 1885, diverged from the usual route on to the Obersulzbach glacier, intending to gain the ridge between the Gross Venediger and Gross Geiger. After making various circuits, he reached the upper firn just below the summit. With some difficulty he crossed the berg-chrond which played so important a part in the attempt of 1828, and cut his way up to the S.W. ridge, whence the route to the summit was easy. The first explorers were prevented from doing this by reason of a great crevasse on the ridge, which has subsequently disappeared, but of which Dr. Lammer could still see traces. The summit was found to be an obelisk of snow, from which he had to cut away a mètre of its height before he could stand on it. He describes at some length the various forms of cornice seen on the summit in different ascents. The actual top appears only to have been seen in 1871. A fine view of one of the most remarkable forms of this cornice is to be found in the first volume of the Jahrbuch of the Austrian Alpine Club (1865).

The greatest interest, however, of the volume is concentrated in two articles—one by Professor Schulz, on two excursions in the Adamello group, and another by Herr Purtscheller, on two expeditions in the

* This is probably an error for 1856.

Graian Alps. All these excursions were made by both these gentlemen together. The two former are examples of ridge excursions (*Gratwanderungen*), which of late years they have done so much to popularise. Herr Schulz regards them as the natural outcome of mountaineering progress, the order being—1. The ascent of a mountain from one side, generally the easiest, and descent by the same route. 2. Ascent by some other more difficult route, and descent by the same. 3. Ascent by one route, and descent by another. 4. The ascent of one mountain, and the passage along the ridge to one or more adjacent ones. This has enabled them to add largely and very rapidly to their scores of new ascents. But it seems hardly reasonable to reckon all the points in a ridge, in themselves probably insignificant, as new ascents. Herr Schulz's first excursion was made with Herren Purtscheller, Reichl, Migotti,* and Mr. E. T. Compton. Starting from the Rifugio di Lares (2,110 mètres = 6,923 feet), they ascended in succession the Caré Alto (3,461 mètres = 11,341 feet), Monte Folletto (3,404 mètres = 11,168 feet), and the Corno di Cavento (3,401 mètres = 11,158 feet), crossing the Passo di Lares and the Passo di Lobbia Alta, to the Leipzig hut (2,470 mètres = 8,104 feet). This was on August 13, 1886, and the excursion occupied 13½ hours. Next day Herren Schulz and Purtscheller made in 11 hours the tour of the Corno dell' Adamé (3,275 mètres = 10,745 feet), Monte Fumo (3,418 mètres = 11,214 feet), the Dosson di Genova (3,430 mètres = 11,253 feet), and the Cresta della Croce (3,270 mètres = 10,729 feet). Three (possibly four) of these were new ascents. These expeditions were effected with comparatively little difficulty, but Herr Schulz gives it as his opinion that it will be the ambition of the future Alpinist to make such excursions, and that they present the greatest charm, but also the greatest danger.

In the Graian Alps these two gentlemen, starting from the Rifugio Vittorio Emanuele at 5 A.M. on August 24, 1885, reached the summit of the Grand Paradis (4,061 mètres = 13,324 feet) at 10.45 A.M.† They then determined to attempt the difficult descent by the N.E. side. Want of space forbids us to describe this in detail. Suffice it to say that, following in the main the line of Mr. Yeld's ascent in 1879, after a continual struggle with all sorts of difficulties, they found themselves, after having reached the great Tribulation glacier, separated from the lower glacier by an impassable couloir. Their only chance was to reach a cone of snow, formed by the avalanches down the couloir, which communicated on the further side with the glacier. Between the cone and the wall of the couloir was a deep crack. Into this Herr Schulz was lowered by the rope. Herr Purtscheller, after descending as far as possible, could find no means of looping the rope, and at last had to turn face to the wall and let

* This gentleman was killed two days later on the Cercen Pass (*A. J.* vol. xiii. p. 114).

† Diverging from the usual route on their way up, they had to cut steps up a dangerous ice-slope, where the *Steigeisen* rendered essential service. During the last hour Herr Purtscheller carried his friend's knapsack, which weighed more than twenty pounds av.

himself slide downwards as gently as possible. At the right moment Herr Schulz supported with his ice-axe, and checked the descent, and Herr Purtscheller gained the bottom by a spring from the rock. Some gymnastic efforts were still required to reach the cone, and their work was over. 'We breathed relieved; an inward satisfaction filled us, and not without a slight shudder we regarded the formidable cliffs of rock and snow with which we had struggled for four hours continuously.' These are strong expressions for such mountaineers, and speak volumes for the difficulty and danger of the descent.

We venture, however, to think that some at least of their difficulties might have been avoided if they had studied more completely the history of the previous ascents of the Grand Paradis on this side. Herr Schulz says* that there have been only three, but we understand that the mountain has been ascended from Cogne at least seven times, and probably more frequently.

After being detained in the Upper Pousset chalets a whole day by rain, they started on August 27 for the Grivola at 5.20 A.M. At 8.15 they were at the edge of the Trajo glacier immediately below the deepest notch in the ridge between the Grivola and Grivoletta. They determined to try by this ridge, as the rocks appeared dry and free from snow, whilst those to the left, near the usual line of route, were covered with snow. They reached the crest over easy rocks at 8.50. Here a violent north-west wind was blowing. The ridge was very steep, sometimes overhanging, and full of jagged points, which must be turned on one side or the other. In passing one of these they had a narrow escape. 'I advanced,' writes Herr Purtscheller,† 'to one of these, whilst Schulz, a little below, held the rope. After a few steps my position on the steep ice-glazed slabs, covered with snow, seemed terribly insecure. The rock underlying the ice forbade the cutting of deep steps. My hands sought in vain for a hold. The loose rubbish began to give way, and stones to rattle down, but at the last moment I found, just in time, a sufficient projection, and in a couple of steps I had passed the danger. My friend on a ledge lower down could have given me no support by drawing in the rope to save me from slipping. I fully understood the danger I was in, and said to Schulz, "I'll not run this risk again, if I get through this."' Again, after Herr Purtscheller had supported Herr Schulz with the rope from the top of one of the points in the ridge, he looped the rope and let himself down on Herr Schulz's shoulders. Once again Herr Purtscheller dislodged a stone estimated at a hundredweight, which looked likely to demolish Herr Schulz, but fortunately only broke his spectacles. The ridge became at last quite impracticable, and they turned off on to the south-east side of the pyramid. The ground became easier, and the top was reached at 1.35 P.M. In the descent they returned to the north-east ridge, and followed a large steep couloir, which is probably on the usual line of route. Lower down they were driven into lateral couloirs, and finally Herr Purtscheller had to let down Herr Schulz with the rope, and after

* *Zeitschrift*, p. 360.

† *Ibid.* p. 369.

some searching found a rock where he could loop the rope to let himself down.

Here, again, apparently, they had not studied thoroughly the history of the Grivola ascents. For on August 16, 1872, Messrs. Still and Pratt-Barlow forced the north-east ridge, after overcoming the greatest difficulties.* If they were aware of this ascent, we must suppose that they wilfully chose their route, despite the trouble it was known to have given other good mountaineers. Besides, the face of the Grivola is everywhere perfectly—even absurdly—easy. The ascent from the Trajo Glacier has been made in 85, and the descent in 62, minutes. Even with the fresh snow it would probably not have presented serious difficulties to such experienced climbers.

Both these gentlemen think it necessary to justify themselves against the charge which has been brought against them of seeking danger for its own sake. Herr Schulz writes: † 'It is not the desire to gratify ambition (though this, to a certain degree, influences some), nor the delight in danger, or, as has been said, the love of danger, that forms the true motive power of mountaineering rightly directed, but the attractive force of nature.' And Herr Purtscheller: ‡ 'We knew that in our descent to Cogne difficulties and probably dangers would meet us; but as the day was early, the weather and snow good, we believed we were capable of overcoming them by exercising all care and attention. It was the confidence of being able to overcome the danger by the experience we had acquired, and not the purpose of deliberately seeking it (that lay far from our thoughts on this as on our other expeditions), which made us determine to take the difficult route down the north-east side of the Grand Paradis.'

There does not seem to be much difference between going into danger because you feel confident of overcoming it, and seeking danger for its own sake. Both Herr Schulz and Herr Purtscheller have had some narrow escapes, and if the 'attractive force of nature' is to lead a man to ascend every peak that 'rises into ether blue' in spite of the dangers, sooner or later the consequences will be serious.

Besides the two maps already referred to, there are in the case attached to the volume a panorama from the Sonnblick (3,090 mètres = 10,138 feet) in Rauris, with a notice by Dr. Frischauf; a panorama from the Raschütz (2,278 mètres = 7,472 feet) in the Grödnertal; and other illustrations in the text.

J. S.

Die Dolomit Alpen, Glockner, und Venedigergruppe, Zillerthaler Alpen, nebst den angrenzenden Gebieten. Von A. Waltenberger. (Augsburg: Lampart, 1887. 3s. 6d.)

This handy little guide-book forms the long-expected fourth part of Waltenberger's *Special-Führer*. The three earlier volumes of the set described the Allgau, Vorarlberg, West Tyrol, Appenzell, S. Gallen, the Prättigau, and the Lower Engadine (vol. i.); the Stubai, Oetzthal, and Ortler groups (vol. ii.); the Bavarian highlands, and the Salzburg district (vol. iii.); and are the best guides which we as yet possess on the

* *Alpine Journal*, vol. vii. p. 2.

† *Zeitschrift*, p. 353.

‡ *Ibid.* p. 361.

Eastern Alps. They are extremely thorough, and largely based on the personal experience of the compiler, while they are of use both to climbers and to ordinary travellers. The new volume is worthy of its predecessors. There are, indeed, some mistakes in it (such as the statement on page 137 that the Marchese Pallavicini lost his life in an attempt to repeat his difficult climb up the Glockner direct from the Pasterze glacier), but they are few and far between. It would have been well to indicate the sources from which the descriptions of the mountain ascents are derived, as was done in the earlier volumes. The maps are not any better than those in other guide-books relating to the Eastern Alps, but in this case they make no pretence to be special district maps; so that for the Venediger and Zillertal groups we must still have recourse to those published (on a scale of $\frac{1}{50000}$) by the German and Austrian Alpine Club, and for the Dolomites to the sheets of the Austrian Military Survey ($\frac{1}{75000}$) and of the new Italian Survey ($\frac{1}{50000}$). It is much to be desired that the German and Austrian Club should join hands with the Italian Alpine Club in the preparation of a really good and complete map of the Dolomites. Despite these small drawbacks, I warmly recommend Waltenberger's guide-book to the Dolomites, &c., to my colleagues of the Alpine Club who may be meditating a visit to those districts.

A. LORRIA.

Une Ascension au Mont Blanc et Études Scientifiques. Par l'Abbé Jean Falconnet. (Annecy: J. Niérat, 1887. 3 francs.)

M. Falconnet is the *curé* of the village of Magland, between Cluses and Sallanches, and gives to the world in this book a narrative of the ascent of Mont Blanc which he made, in the company of two other *curés* and several guides and porters, early in July 1884. The party ascended by way of the Aiguille du Gôûter (starting from Chamonix, and going up by way of the Pavillon Bellevue), spending the night there, and completing the ascent next day by the Bosses, the return being made by the usual way by the Grands Mulets. In many points this narrative recalls the accounts of the early conquerors of Mont Blanc. The ascent is throughout *extraordinaire*, and prodigies are performed by every member of the party. In one particular, however, it differs very considerably. M. Falconnet tells us that he is very subject to *vertige*, and that in passing the Pas du Saix sous Aren on his way to bless the chalets of Chérantaz, near Magland, he suffered very much from the sight of the precipices above. Curiously enough, he did not suffer from this at all on the Bosses, taking it all as a matter of course. Nor did he suffer from mountain sickness or lassitude, or anything, save an overpowering sense of the grandeur of the scene around him, and from sunburn. Yet we gather that M. Falconnet had never been up a high peak before, and when he left his house for a short excursion in the valley of Chamonix he never dreamt of ascending Mont Blanc or any other snowy summit. His experience seems to show that the inconveniences suffered by the earlier explorers, and by many even at the present time, are not solely due to sheer inexperience, but rather to the state of the body before the day of the climb. The 'Études Scientifiques' appended to the narrative of the

ascent are, as M. Falconnet very candidly avows, but a compilation from the standard works on Mont Blanc, particularly the classical book of M. Durier. His excuse is that for many persons they are inaccessible on the ground of cost, and some (such as Rendu's 'Memoir') are becoming rare. A poem on Mont Blanc, by M. Lombard, *curé* of Les Houches, and one of M. Falconnet's companions, completes an unpretending volume, the writing of which has doubtless been very pleasant to the author, and the reading of which will be so to those of his readers who are not critics.

PROCEEDINGS OF THE ALPINE CLUB.

A GENERAL MEETING was held in the Club Rooms on Tuesday, February 7, Mr. C. T. DENT (President) in the chair.

MESSES. P. J. DE CARTERET, ARTHUR MACNAMARA, JEAN MAITRE, and R. G. TATTON were balloted for and elected members of the Club.

The CHAIRMAN alluded to the loss the Club had sustained by the recent death of Mr. F. J. Church, remarking that it had been his melancholy duty on more than one occasion to announce at the general meetings gaps made in the ranks of the Club. Such losses, however we might regret them, were not unnatural in a club that had been founded nearly thirty years back, and we were in a certain measure prepared for them; but in the case of the younger members, especially one like Mr. Church, whose presence was as well known at the Club meetings as at his favourite haunt of Zermatt, the news of death came with a double shock. A member who could be staunch as well as critical was gone, and a familiar face would be seen no more.

The HON. SECRETARY presented the accounts for the year 1887, and proposed the adoption of the statement, and the placing of a further sum of 100*l.* on deposit. This was seconded by Mr. WALLROTH, and after a few remarks from Mr. TROTTER and the CHAIRMAN was carried *nem. con.*

The CHAIRMAN then called on Mr. FRESHFIELD to read his paper on 'The Caucasus Revisited,' at the conclusion of which a number of lantern slides from M. de Déchy's Caucasian photographs were shown on the screen.

Mr. BIGG-WITHER considered one of the chief interests of the country to be the very remarkable types of humanity that are met with.

The CHAIRMAN did not agree with Mr. Freshfield in not expecting people to go to the Caucasus. Switzerland is now an extraordinarily easy country to travel in, and by comparison Caucasian travel is doubtless more difficult, at least in the mountains, chiefly in respect of commissariat and transport. Grand as is the scenery there, it will not spoil one for the Alps. Tact is necessary in dealing with the natives, as well as a knowledge of the art of travel, qualities not best acquired in Switzerland.

Mr. BEACHCROFT asked for an estimate of the probable cost of a tour of six or seven weeks in the Caucasus.

Mr. FRESHFIELD, in reply, said that on the unfrequented tracks

facility of travel was greatly a matter of chance; one might be lucky, or the reverse. The villages on the south side of the chain are admirably placed as mountaineering quarters. The question of cost is not easy to answer definitely. Twenty years ago their expenses were about 120*l.* for each of the party. At the present time one might add 10*l.* a week to the expense of the journey to Tiflis and back, exclusive of the guides' fees; but for a large party it would be cheaper. One essential condition of quick success is to ensure having sufficient provisions and camping impedimenta.

A vote of thanks having been unanimously accorded to Mr. Freshfield, the proceedings terminated.

A General Meeting was held in the Club Rooms on Tuesday, March 6, Mr. C. T. DENT (President) in the chair.

Messrs. ELLIS CARR, J. WALTER HOOK THORP, and WILLIAM A. WILLS, M.B., were balloted for, and elected members of the Club.

Mr. G. S. BARNES read a paper on 'The First Ascent of the South Peak of the Dent des Bouquetins'; and the HON. SECRETARY read a short paper by Mr. W. CECIL SLINGSBY, entitled, 'A Day on the Aiguilles Rouges d'Arolla.'

After some remarks from Mr. MACNAMARA, and from Mr. H. S. KING, M.P., who considered that no better climbing was to be found anywhere than at Arolla, the CHAIRMAN called attention to the great advantages of having papers illustrated by large sketches and maps such as those now provided by Mr. Slingsby, to whom the best thanks of the Club were due. He proposed a vote of thanks both to him and to Mr. Barnes for their interesting papers. This was carried by acclamation; and after a few remarks in reply from Mr. Barnes, the proceedings terminated.

A General Meeting was held in the Club Rooms on Tuesday, April 10, Mr. C. T. DENT (President) in the chair.

Mr. J. J. THORNEY and Signor VITTORIO SELLA were balloted for and elected members of the Club.

The CHAIRMAN introduced to the meeting Melchior Anderegg, who was present as the guest of Mr. C. E. MATHEWS. He was most enthusiastically received.

The CHAIRMAN said that only recently the Committee had received the resignation, through ill-health, of the Rev. J. F. Hardy, one of the original members of the Club. He had now to make the further announcement, not entirely unexpected, of his death, which took place on Tuesday, March 27. He continued:—'There are some here who knew him in early days. I can but speak now with regret of the severance of a link which binds us not only to the early history but to the very birth of our Club. We shall miss him; his faults were on the surface, and those who could look deeper were able to recognise in him a genial, cheery companion, with a sturdy independence of character, an abhorrence of sham and humbug, a frank outspokenness and sincerity that are only too rare nowadays; and finally, he was almost to the end warmly attached and faithful to the interests of this Club, and all that pertains to it.'

Mr. C. E. MATHEWS said that as one of the original members of the

Club he well recollected the meeting at which it was founded, Mr. Hardy being also present. He was a man with both faults and virtues; we should now be blind to his faults, and see his virtues only. He was high-minded, hearty and genial, and a most sympathetic friend. The Club had lost one of its most trusted and valued members.

The CHAIRMAN then said the amount of the subscriptions already paid in, or promised, to the Alpine Club Relief Fund, in aid of the sufferers from the recent avalanches in the Alps, was now about 340%. He reminded members that in 1877 over 900% was collected for the Knubel Fund, and hoped that more subscriptions would come in. He regretted that the circular addressed to members only reached them simultaneously with the appeal to the general public in the newspapers, but it was important that the latter should not be delayed.

Mr. HUGHES said that the English chaplain at Saas had raised 1,000f. a fortnight before the Alpine Club Fund was started. He suggested co-operation with the chaplain in the distribution of the fund.

The CHAIRMAN said the Club Committee would be glad to communicate with others who are collecting.

Mr. C. E. MATHEWS thought it would be better for all such sums privately collected to be paid over to the Alpine Club Fund.

The CHAIRMAN then called on Mr. CHARLES HOPKINSON to read a paper by Mr. W. Cecil Slingsby and himself on 'An Ascent of Mjölmir, Norway.' The paper was illustrated by a large number of bold sketches by Mr. Slingsby, and by sketch maps of the district.

At the conclusion of the paper, Mr. SLINGSBY said the height of these mountains seems small, being generally not more than 6,000 feet; but they rise direct from the sea level. Climbers would find plenty to do on them.

Mr. RUSSELL STARR bore testimony to the good qualities of Lars Janssen as a guide.

The CHAIRMAN said Norway certainly appeared to be a fine field for the climber. He proposed a vote of thanks both to Mr. Hopkinson and to Mr. Slingsby, to the latter especially for his admirable illustrations, without which such a paper is almost unintelligible. The motion was carried by acclamation.

Mr. HOPKINSON, in reply, said it was a great advantage to go with Mr. Slingsby to Norway. His name is a great power there, and his knowledge of Norsk invaluable.

The proceedings then terminated.

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PRINTED BY
 SPOTTISWOODE AND CO., NEW-STREET SQUARE
 LONDON

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