

Oregon.

	Latitude.	Height.	
Mount Hood . . .	45° 10'	11,225 feet	1854 Dryer
„ Jefferson . . .	44° 35'		
„ Three Sisters . . .	44° 5'	10,500 „ ?	
„ Diamond Peak . . .	43° 27'	10,000 „ ?	
„ Scott's Peak . . .	43° 4'		
„ Pit, or McLaughlin . . .	42° 31'	10,500 „ ?	

California.

Mount Shasta . . .	41° 50'	14,440 feet	1870 King?
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The latitudes above given vary with different authorities and maps. Vancouver and Humboldt vary with each other. The above figures are, however, sufficiently near to identify the different mountains on the maps.

I propose in a second paper to give notices of the above mountains in detail, supplying such facts respecting their early history and physical features as I have been able to gather.

THE MATTERHORN WITHOUT GUIDES. By A. CUST.
Read before the Alpine Club, Feb. 6, 1877.

THE warm eulogy passed on our ascent of the Matterhorn by the President of the Club, at the Christmas dinner, has materially added to my satisfaction in preparing the present paper, and has removed any diffidence that might have been felt from the probable lack of interest in the subject to many members of the Club. Scarcely less gratifying were the remarks which fell from Mr. Wills, appreciative of the value of my detailed justification of our performance in the 'Times;' while a recent article in the 'Saturday Review,' to which reference has already been made in the 'Alpine Journal,' dealing with our expedition in a similar spirit, amply recognises its probable compatibility with real prudence. With the position, which I was at great pains to assert, thus fortified, I may venture to assume in the present paper that it is generally admitted by the club that, so far as my friends and myself were concerned individually, we were justified in making the attempt.

Having been given to understand that the reading of this paper would be made the opportunity for opening certain mountaineering questions connected with it, and on which, in part, I have previously expressed an opinion, I conceive it the

best strategy to preface the proper subject with more general remarks. If in so doing I find myself involved in repetition of what I have written elsewhere, I the less regret a tediousness that can hardly be avoided, that I shall have the satisfaction of not appearing to shun the criticism of those who alone are competent to express an opinion. This reference to myself shall be my occasion for deprecating any measurement of my own merit in the expedition by the prominence in print of my name in connection with it. I have a penny-a-lining propensity from which my two friends are fortunately free, and it is owing to their modest refusal that the honour of representation on the present occasion has fallen on me.

It is not my aim to advocate exclusively mountaineering without guides; though I not only defend, but hold up to approbation the moderate practice of it indulged in by my friends and myself. It is easy to talk of mountaineering without guides, but what does it involve? It involves so many drawbacks as practically to make sole devotion to it out of the question, and to deter all but certain individuals whose tastes happen to incline them to it from even a partial adoption. To our peak-baggers, the sorry struggle on the part of certain eccentric individuals for a few well-known passes is, if not a sheer and strange waste of time, at least a contemptible adhesion to beggarly elements. A passing smile of pharisaic compassion is the utmost recognition that the bold passage of a Col d'Hérens, or the like, flush as it may one's triumphant brow with conscious pride, may expect to gain from them. It must be remembered that to dispense with guides is to dispense with expeditions of importance, for nothing can be accomplished by amateurs except what for parties as usually constituted is quite commonplace. All amateurs are immensely inferior to the good guides, and to the latter alone must be relinquished overcoming real difficulties. Amateurs who had so little self-knowledge as to entangle themselves in intricacies which professional skill alone could be relied on to unravel, would probably meet with disaster, certainly with disappointment. Besides the humble nature of the results to be expected if you go without guides, the question of provisions and knapsacks is a weighty one; the splash of wine has a musical ring in the guide's tin, which is wholly absent when you carry it yourself. You may, perhaps, have to turn back *re infectâ*; you may chance to get lost; you will probably take an inordinate time over your expedition. After all, you will have the mortification of appearing a nobody compared with others who are meantime lightly skipping from one first-class peak to another. For even moderate success, gradual training

and humble beginnings will generally be requisite. Obviously, therefore, those who would be successful mountaineers must only gratify any inclination they may have for independent climbing by way of alternation with the conventional mode. So, probably, in my judgment, will the greatest amount of pleasure be obtained from both; for each in turn will derive fresh zest from the alternation, while the separate provinces of the two will be more clearly recognised.

But, it will be asked by incredulous persons, What pleasure can there be to counterbalance such glaring discomforts? In replying, I hope for sympathy from none but the initiated. They will know that money cannot buy, nor the triumph of gratified hope in the proudest achievement eclipse, the rare joys we may pick up to be retained as memory's dearest gems in some paltry adventure without guides. The need of self-reliance, the trust in friends, the very alternations of hope and fear, touch, if I may be pardoned for the expression of opinion, a deeper chord than any ordinary successes won in the conventional mode. The latter, of course, has other, and perhaps wider, pleasures of its own; all I mean is that independent climbing has some to confer which, as they are different in kind, are also probably the most intense of those inspired in the Alps.

As to the prudence of such expeditions, rash condemnation of any particular undertaking is suited to the level of the obtrusively ignorant 'Globe.' Newspaper balderdash revels round Alpine mishaps. A solitary instance of sense in an autumn article in the 'Daily News' may perhaps have been due to the employment of the ordinary writers of that paper in Bulgaria. Let not, then, the expert head be shaken till that discrimination has been applied which alone can decide in such a matter even between such extremes as ordinary prudence and the wildest foolhardiness. My criterion of prudence has four heads—a party all experienced, gradual practice, unexceptionable weather, an expedition fairly within the powers of amateurs.* I think, with our information, we were right in assuming the last of the Matterhorn; but I should shake my head did I hear of an attack on such a mountain as

* I am grateful to the Rev. H. B. George for suggesting the third head, which, however, was not designedly omitted. I explained at the time my entire agreement with Mr. George's observations. (See 'Alpine Journal,' last No., p. 232.)

I may venture, and that with some satisfaction, to claim for this portion of my remarks a kindred spirit with language, which did not meet my eye till after writing, contained in 'Italian Alps' at p. 301.

the Weisshorn by amateurs personally ignorant of the ascent—firstly, because I should regard success as highly improbable; secondly, because unless I knew the men, and that they had the moral courage, which I distinctly claim for our own party, to turn back in case of difficulties beyond their power, I should consider it possible on a mountain of such intricacy for danger to be incurred in the attempt to return from the point attained.

It is not the case that encouragement has been given in mountaineering quarters or writings to dispensing with guides. The well-known 'High Alps without Guides' not only stands alone, but, by the straightforward honesty of its account of many and serious failures, might well make a man reflect before he tried to follow in the author's steps. Except as an occasional resource very few people have so far adopted this species of mountaineering. But in considering the future development of independent climbing, it must be remembered that, besides inclination, there are two operating motives deserving of consideration.

First,—While the number of persons who attempt climbing has increased considerably during the last few years, the number of really good guides remains strictly limited, and the competition between the old aristocracy of the Alps, to use metaphorical language, and the moneyed upstarts has resulted in a rise in prices. On the one hand, temptations are thrown in the way of guides to desert long-standing employers; and the latter find it necessary to increase their payment in order to keep their old friends in good humour. On the other, it is becoming more and more impossible for men of comparatively humble means to employ even ordinary guides for a series of weeks. The more extortionate, therefore, the charges, too apt to follow the fashion set by a few wealthy customers, become, the larger will be the number of individuals whose limited margin will exclude them from the regular *entrée* of the Alpine reception-room, and drive them to occasional or irregular participation. Proud as we have reason to be of the exploits of our countrymen, we must still acknowledge the truth, that they, to except a few well-to-do individuals from other countries, have for years had a monopoly of the services of the competent guides. The genial and enthusiastic temperament of many of the writers in the Swiss Alpine Club 'Jahrbuch' cannot but inspire the candid mind with regret that in their own country such meritorious persons should only have had access, as a rule, to local or inferior professional assistance.

Second,—In view of the present shoals of professing climbers,

it was once suggested to me by a distinguished authority that it would come about that the only way real mountaineers would be able to differentiate themselves would be by banding together to go without guides. It is notorious that ascents that used to be considered some test of mountaineering ability are now made with a facility and frequency unknown a few years ago. Confidence and knowledge, particular or general, of the mountains has so spread among the guides, that they will not hesitate to conduct ladies or persons with no claim to climbing skill up first-rate peaks, not long ago thought really difficult. Many of the persons who are helped up these mountains, and call them 'easy,' would stare aghast if taken to climb out of the beaten track among our British hills. The one requisite for success in the case of a young man of good health and walking powers who wishes to try the excitement of, or get a name for, the loftiest climbing, is money. Cricket is a thing that is admitted by all to need acquired skill; a man can buy his mountaineering as he can his yachting; but for all that, there are yachtsmen and yachtsmen.

On one point I should be sorry to be misunderstood. Nothing can be more innocent, nay more commendable, in the ordinary and peaceful visitor to Switzerland, of either sex, than getting an introduction to the upper ice-world by means of a little casual mountain climbing. I should be the first to recommend it to my friends—the last to depreciate their success. Such gentle and modest persons are more than welcome to a diversion which adds charm to their society, and may eventually engross their taste; but it is not to them that I allude.

There is another type, destined, perhaps, to a large exemplification. Picture an individual rushing out to do the thing, and boasting of bagging in a season or two as many peaks as would have crowned a veteran career of yore. With him all is business; the poetry and beauty of nature are for him idle sounds, for they do not help him in his aims. He has the spirit of an American, whose scoffs at myself and friend as we turned off the track to ascend the Obergarnhorn, I have never forgotten—'What's the good? It's not a summit of importance, and doesn't pay!' The glacier world impresses him with no sense of grandeur; its phenomena are passed by unnoticed, because unknown; its magnificent proportions are unsuspected, because viewed with eyes and mind untrained. It has no present interest for him but as a farrago of 'agenda,' its past associations are pleasant or the reverse, as its 'acta' appear to him to be superior or inferior to the performances of others in respect to the time taken and other points of comparison.

For topographical information, even as to his own route, he is at the mercy of the ignorance or ingenuity of his guide. When he brags in an offhand fashion of easiness or difficulty in particular ascents, he means the relative amount of trouble that hauling him up cost the guides.

The last ten years have done much to revolutionise mountaineering; what will be the fostering and developing effect of the next decade on the germs, perhaps already beginning to be perceptible, it makes one shudder to contemplate. Differentiation in any shape will at least become excusable.

The change that is taking place can hardly be denied. Already something of the old awe of the early explorers has inevitably passed. Already the Alps are being regarded more and more with an eye rather to successful work than to general enjoyment. The spirit of cramming is not confined to Government examinations. Peak after peak and pass after pass is rammed down the memory, sometimes without so much as a respectable wadding of dinner or night's lodging interposed. Individuality of impressions has a tendency to be lost in a vague and generalised consciousness that one view is as good as another. We hear little of the width of observation of the old school, little of the patient exploration for the sake of increasing knowledge rather than of satisfying ambition; of fortifying the memory by sketches, of semi-scientific care. We hear much of an eagerness to pluck peaks like daisy-heads to see who can get the longest string; of rushing over ascents to see who can do them quickest; of the exercise of ingenuity to discover byways and cross roads to that paradise of gratified ambition, whose main door is so fast closing the columns of new expeditions. It is only English to love high-pressure work, to confine the attention to the main thing. To fritter time away in staying a day or two at a place to explore its smaller beauties is plainly almost out of the question; and an extra hour or two by the way is a grudging concession to the claims of the finest scenery. It is difficult to admire too much the energy, courage, and skill of the more active of our mountaineers; I fear that a time will come when they will deplore the barbarous hordes that will succeed and ape them. What will be the feelings of genuine lovers of the Alps when hustled at every turn by creatures whose development has reversed Darwin's process? What, to stir up the lowest depths of prophecy, when the 'odious' people who have hitherto not thrived above the level of the pines infest even the upper snows, and the dear old mountains swarm with excursionists armed with Messrs. Cook's and Gaze's newest ice-axes, thick-branded with

names, and furnished with first-class guide-coupons? With what eyes shall we read the following advertisement?—‘The personally-conducted tour, starting with the lower ranges about Chamonix, to insure the necessary training, will pass from Mont Blanc by the celebrated high-level route to Monte Rosa, and in the course of a month will escalate the most majestic mountains in the Alps. To make success certain, twenty of the best guides in Switzerland have been engaged for the next five seasons.’

The objections to our Matterhorn expedition, on the score of risk to others from the precedent, have been, I believe, pretty well given up. How far personal enjoyment should be sacrificed to avoid possible detriment to others, is a problem which I do not pretend to solve; the high moral tone of some of my Alpine friends leads me to prefer leaving it with them! Anyhow we are not the first Englishmen generally, still less the first members of this Club, to whom the objection would apply. Competent persons who follow in our steps will know, as we did, how to take care of themselves; vanity or carelessness may lead others to downfall, but they must take the consequences of their want of self-knowledge. As to the fate of Messrs. Brown, Jones, and Robinson, I sufficiently settled that in the ‘Times.’ It is simply ludicrous to suppose our illustrious imitators either venturing to set foot on the face of the mountain or finding the way to it. In a matter of this kind the fullest publicity is the truest public service. Granted that we were justified in making the expedition at all, our most humane course was to put the public in speedy possession of authentic information as to its real nature. To allow ignorant people who troop to Switzerland to be told by persons they met that a set of tourists had escalated the Matterhorn might have been to imperil the lives of Her Majesty’s subjects. The ascent made, what more patriotic than to prove that it only differed in name from an ascent made with guides?

A writer in the ‘Era’ supplies the true origin of our expedition. After showing ‘how musty University dons leave their books and their mathematical instruments to show that in Switzerland there is “life in the old dog yet,”’ and that ‘the popularity of Alpine climbing has directly suggested a new excitement,’ he refers to our ascent. ‘Here,’ says he, ‘we have the new excitement. As it was found that University rooms and public school-houses and barristers’ chambers echoed no more with the marvellous history of the feats of So-and-so . . . it became necessary to do a deed of exceptional daring. Accordingly, to go up mountains without guides was immediately decided upon.’

Leaving our writer to his ingenious surmises, I will content myself with suggesting that a contemplated attack on the Matterhorn was the natural development of previous expeditions without guides, the commencement of which was of a humble character. We had reason to suppose that the reputation of the mountain was considerably in excess of its difficulty; and judging from past common experience that our party had at least a chance of success, we resolved to make the attempt the main object of the then coming season. It loomed before us with visionary unreality for a good part of a year.

It is remarkable that in spite of the magnificent weather that had prevailed only one ascent of the mountain preceded ours in the season. A second attempt, a few days before ours, was frustrated by the violence of the wind, which knocked down one of the guides. We were indeed fortunate beyond what we might have anticipated in such favourable weather and condition of the mountain in having the ascent to ourselves. Besides obvious inconveniences, other parties would have rendered that independence which was our boast almost impossible. Tracks, of course, on a rock mountain like the Matterhorn, can hardly be formed to any extent except in occasional patches of snow.

Besides other ascents without guides, including that of the Grosse Windgelle, from the training-quarters in the Maderaner Thal (which I mention in order to praise the excellent *cuisine* of its hotel, and the friendly and obliging attentions of the fair conductresses, adding one word of counsel that the visit be timed not later than the first week or so in July, so as to secure the comforts of elbow-room), my redoubtable friends Cawood and Colgrove, a short time before the expedition now described, accomplished unaided the ascent of the Jungfrau. To them also belongs the credit of one of the most difficult parts of the expedition, viz., finding the hut, in which I was unable to accompany them. I had been off work for several days, and the length of time occupied by the final expedition was increased by my want of condition. It should be mentioned that while none of us had been on the mountain before, our information, almost entirely derived from some vague published accounts, happened to be both scanty and erroneous. My friends, then, found a difficulty that may surprise some of my hearers, in discovering not only the way on to the mountain face, but the hut itself, of whose position they had only an indistinct general knowledge, and which is not visible till the traveller arrives within a few minutes of it, when the white rope hang-

ing from it is its most certain token. From this point they started back at 4.45 P.M., and regained Zermatt between 8 and 9.

The final expedition was now definitely determined on for the following day. Before starting it was expressly agreed to turn back should the difficulties exceed our powers or involve risk—a contingency which I for one had contemplated as not at all improbable. In point of fact, the question never even arose, for the difficulties actually encountered were always fairly within our combined power; but we knew that we could give a thing up if advisable, for we had proved it on a former occasion. So far as I am aware, no appreciable risk was met with on the mountain, unless I ought to except the chance of our being hit by a falling stone. It must be remembered, moreover, that the weather was above suspicion.

When morning came we were in some doubt whether to go up to the hut by ourselves or try to get a porter. The former course was the most tempting, as it appeared dubious whether we should be successful in getting a porter, while the attempt would effectually disclose our project. I felt obliged to throw my own voice into the porter scale, and it was resolved to sound M. Seiler, without declaring our real intentions. Now that the way to the hut had been found, no one could accuse us of being guided thither. With his usual courtesy M. Seiler at once offered to procure a man. When, however, the provisions were collected, I. Sarbach, who had been procured, changed his mind, and, as it appeared, made intentional difficulties. Gloomy contemplation of the deserted provisions in company with the landlord resulted in the, by this time, somewhat unwelcome recovery of Sarbach, reinforced by a second man.

At 11.15 A.M. on July 22 we set off, certainly without an encouraging word from anyone, on an enterprise apparently regarded by others as of a rash or dubious nature. On the way the porters picked up some poor and scanty fuel; and we should have had difficulty in raising a fire at all, had not Cawood, true to his old weight-bearing renown, carried up a tree stem hewn out with iceaxes, and had we not found a further supply in the hut, erroneously asserted by Sarbach to consist of the boards belonging to it which had been cut up by the previous party. During the ascent Colgrove kept in front to show the porters their real character, and the fact of our knowledge of the route. The hut was reached at 6, and the porters returned the same night. Several of my hearers must have witnessed from this wild spot the effects of the setting sun; the shadow of the mountain on the glacier below was one

of the most striking accompaniments of a sunset I have ever seen.

No hut has been abused more than that on the Matterhorn. I regard it as a very creditable production, considering its position and the difficulties to be overcome. A shelter from rock and rain, sufficient pots, pans, and blankets, an iron stove, are surely luxurious accommodation to a hardy man when the valley is 7,000 ft. below. In fact, not only the multiplication of luxuries in huts, but the huts themselves when actually placed on mountain-sides, chains, cables, and other appliances, are only the first steps of a ladder ending in a Righi railway and hotel. No one is more grateful than myself to well-intentioned people for placing huts and chains on mountains when I have occasion to use them, but in amusing myself with a blinded Sampson I do not attempt to conceal from myself the nature of the sport. It is not the Matterhorn that is ascended in modern times, but the Matterhorn with a pair of huts and I know not how many climbing cords. Almost anyone can ascend a greased pole by means of a rope ladder. Had a second hut been placed on the north side of the Matterhorn at the foot of the chains, the enterprising gentleman who was dragged recumbent to that spot in six hours from the shoulder would have been enabled to complete his ascent. Such aids are not for mountaineers, but for guides and innkeepers whose direct interest it is to open out facilities that may enable the largest number to share the sport. The present efforts in this direction, however, will be quite eclipsed by those of Mr. Cook when he takes the mountains in hand: the Matterhorn hut will then be furnished with sofas, and hot water in pipes turned on.*

An ingenious arrangement of the bedding, designed to neutralise as far as possible the ice of which the floor was constituted, failed to summon 'nature's sweet nurse,' everyone in the morning telling the other two, who possibly had been looking on him with envy, that he had not slept. However, in spite of the morning cold, the time agreed on for commencing to light the fire was allowed to slip by, and we started at a quarter to 4, a later hour than we had intended. Our ample provisions and wine were divided on the principle of each man's going forth like an ancient legion fully equipped with all the appliances of war; and from this time we kept the rope on over the whole mountain. The climb to the shoulder was far more difficult

* Since our expedition part of the platform has given way and fallen. How far this throws doubt on the security of the remainder, I cannot offer an opinion.

than that below the hut. We were told afterwards we had kept too much away from the arête; but though this probably increased our difficulties, it did not perhaps much add to the danger from falling stones, which must be mainly confined to the part of the face under the final rocks, and to the lower part of the mountain. We, indeed, saw none fall either day except what we dislodged ourselves. A much greater selection of route among the various gullies and ridges was necessary than may be generally thought by persons who have accomplished the ascent in the ordinary way, and this part of the climb appeared both long and tedious. To facilitate our return we made small cairns at various points. It is astonishing what a difference there is in the consumption of time between following the unswerving trail of guides on a well-known track, and picking one's own hesitating way amid unknown and various details not without doubt and discussion.

The shoulder was reached at 6.10, and a halt of about $\frac{3}{4}$ hr. made. Colgrove considered the passage along the shoulder the least safe part of the expedition, the state of dilapidation making it a question whether it might not come down bodily with us. We soon found the base of a chain which passing over not very difficult rocks landed us on a considerable oasis of easy ground under the steepest final cliffs. Here there was some difference of opinion as to our route. The firm persuasion left on my mind by the accounts I had read had been that the route still pursued crossed obliquely part of the northern face, though avoiding the exact site of the accident. Two bleached ropes, wan and melancholy, like sirens from their respective rocks, vied to lure us to themselves, one perhaps a hundred yards away to our right on the fatal northern slope; the other—which we had also seen from below the shoulder—hanging over the cliffs above us from the arête itself. The latter proved an honest friend, for an exploration showed the commencement of another chain, or rather set of chains, previously unsuspected, in connection with it. These conducted us straight up the rocks, which now became exceedingly steep, on or close to the arête. When the chains ceased, contrary to my previous belief that work of considerable difficulty would yet remain, little or nothing was left to be surmounted except the final slope of frozen snow or ice, and in a short time we were on the summit.

We afterwards learnt that the rope we left on the right was one of three or four pieces attached to rocks by Mr. Whymper to facilitate his perilous descent after the accident. Beyond it lies the spot where the fatal slip occurred. The chains, which

lay idle at the hut for some time after they had been provided by M. Seiler, were put up, I believe, in time for the season previous to our expedition. A considerable interval separates the first and second. Each piece is stretched taut against the rocks by iron stanchions embedded in interstices. The latter seem generally firm; one, however, was found by a member of our party to be shaky, and the whole should be carefully looked to every season, or a disaster may occur. We used them with one hand as a safeguard while climbing with the rest of the body. I was much surprised at the discovery that with the mountain in good condition the chains cover the whole ground where difficulties occur on the final peak.

A confusion in my mind was not unnatural respecting the course of the route. Mr. Craufurd Grove, who made the northern ascent after Mr. Elliott in 1868, the first season that the mountain was ascended from Zermatt after the accident, after describing a route which appears evidently that now taken by the chains, says with regard to it: 'The guides—without any reason so far as I could make out—consider that the modern route does not cross the ground where the slip occurred. I believe myself that the actual place of disaster is traversed; but the matter cannot be settled until one of the three survivors ascends the mountain again' (A. J. iv. p. 191). Mr. Whymper says: 'It was supposed by Mr. Elliott that he avoided the place . . . others . . . have thought the same; but, as far as I can learn, there has not been any material deviation from the route we took over the small difficult part of the mountain; and my information leads me to believe that most of those who have ascended or descended the northern route have passed over the exact place where the accident occurred' (*Scrambles*, x. p. 421). Now, nobody can make the ascent in a clear day and confuse together the two routes; they are incompatible with each other, and totally different; and if the route by the upper chains be that which the Zermatt guides have taken from 1868 till now, the scene of the accident is not even approached. Perhaps, in cloudy weather the two may have been confused, or parties crossing over with Italian guides from the other side may have traversed the face near the fatal spot or over it without being aware that they were deviating from the recognised route. Professor Tyndall evidently seems to have traversed part of the face in 1868. 'It is on this slope,' he writes, 'that other catastrophes will occur, if this mountain should ever become fashionable . . . at every step our leader trod the snow cautiously, seeking some rugosity on the rock beneath it . . . I wish to stamp this slope of the Matterhorn with the character that really

belonged to it when I descended it, and I do not hesitate to say that the giving way of any one of our party would have carried the whole of us to ruin.' Mr. G. E. Foster, again, in the same year, speaks of crossing on to the northern face of the mountain for about 200 ft. and then climbing straight up. While an editorial remark appended adds, 'It would seem that the line of ascent adopted by the Zermatt guides, who have now traversed it several times, is slightly different from that taken on the first ascent, the northern face of the mountain being crossed at a lower level' (A. J. iv. p. 159).

On the whole it seems to me probable that, as in the route by the chains no part of the face is crossed and the arête continuously adhered to, the route now pursued is not the same as that spoken of as a 'modern route' in 1868.

The big telescope at the Riffel had been speculating on our vagaries in minute detail, but the sight of a banner formed of a handkerchief and iceaxe triumphantly waved on the top reduced it to respectful silence. The summit ridge requires care in traversing, as it slopes speedily away on the north side, and hangs itself in festoons over the stupendous southern cliffs. In walking along we found it possible to put a foot through the snow without approaching the edge. The ridge is disappointing, not only from the difficulty of locomotion, but from its not containing any one point sufficiently raised to command the whole view. A level ridge 350 ft. long forms of itself a temporary world, and, anyhow, is a feature too prominent for realisation of a position really unique in the Alps. The point marked by the pole, distant perhaps 100 to 150 ft. from the east end, is, I suppose, regarded as the top; but the other extremity of the ridge, beyond a long depression of a more broken and difficult character than the eastern part, is at least equal in height, for in a rough sketch which I took from the top it rises to the level of the highest horizon, being completely above such mountains as Mont Blanc de Seillon. It lies, if a calculation made by one of our party is correct, $5\frac{1}{2}^{\circ}$ N. of due West from the central point.*

We remained on the summit from 9.35 to 10.45, exposed to a wind which was fortunately less strong than keen. The view, except towards the Italian mountains, was perfectly clear. A piece of wood imprinted with our names was attached as a crossbar to the pole. Cold drove us into marching order, Colgrove by unanimous consent occupying the post of honour in the rear, in which position during the descent he showed the cool steady-

* A prismatic compass, held, however, in a very shivering hand, gave a reading of $22\frac{1}{2}^{\circ}$ N. of magnetic west.

ness of a guide. No uncomfortable thoughts suggested themselves as we started, and my words on arrival, 'Well, we have got to the top, and we know that we can get down safely,' were now borne out, for no difficulties occurred with which we could not successfully cope. We moved carefully down the slope, but it gave us no trouble, the surface not being rigidly congealed. We all had our iceaxes, and I should think leaving any iceaxes behind in making the ascent an 'unwise' proceeding. It ought to be clearly understood that this slope is quite easy under favourable circumstances. It ascends from the rocks at a gentle and continually decreasing angle, and there is no difficulty in getting on to it from the chains. Yet when there is loose snow or hail about, it seems to be troublesome to an abnormal extent, especially in the descent. Indeed, nothing in the Alps changes its character more than the final peak of the Matterhorn. In spite of chains, and even in fine weather, I am convinced, from the account given me by so excellent a mountaineer as the Rev. A. Fairbanks of his personal experience, that when the mountain is in bad condition the gravest difficulty, and perhaps peril, may be encountered there even by experienced men with first-rate guides.

On starting to descend we thought it prudent to let out all our 100 ft. of rope in order to allow of individual freedom on the chains; as a result we were sometimes out of sight of each other, and the guides exulted through their telescopes, thinking we were unroped. At the shoulder we took off the extra rope, and after descending the large ice-slope, which proved a little unpleasant, we huddled together to minimise the momentum of the stones we dislodged. Commend me to this face for rottenness of rock and wearisome monotony!

We reached the hut at 3.30, and left it after a stay of about three-quarters of an hour, during which everything was cleared up and put to rights inside. The rest of the descent was tedious and slow, but we had the consolation of knowing that our victory, so long and dubiously contemplated, was won. Evening, again stretching out the great shadow of the Matterhorn, crept on, and it was night when we halted by a little stream-head under the Hörnli. Binding ourselves not to separate, we struggled down in the dark, and reached Zermatt at 9.30.

A friendly welcome awaited us; we had been traced down to the hut by the watchers good M. Seiler had told off to keep us in sight all day. Every servant on the staircase had his word of greeting. Doctor Porges, who had argued us down by the hour the night before our start, and stoutly maintained the

improbability of our reaching the top, now recanted with fervour; unfortunately, he had forgotten to order the brass band and cannon which he had said should celebrate our triumph!

AN ASCENT OF DEMAVEND IN 1875. By Captain the Honourable G. NAPIER, Bengal Staff Corps.*

THE peak of Demavend (pronounced by Persians Demawund) lies about sixty miles north-east of Teheran, in the main chain of the Alburz mountains. It is a huge volcanic excrescence of a lofty spur of the chain.

From a height of about 5,000 feet above the sea the slopes are formed of volcanic débris lying at a comparatively easy incline. Deep valleys have been worn by avalanches and streams from the snow beds; and cliffs of limestone and sandstone—the upper strata of the mountain spur supporting the cone—have been laid bare, but these are clearly visible only on a close approach. From the Caspian or from the plains of Persia, a perfectly symmetrical, conical mass is seen, snow-clad for nine months in the year.

Since the year 1837 many ascents have been made, needless to say, always by Europeans. Few Persians believe even now that the summit has been reached, and none save the villagers on the mountain would dream of making the attempt. To them it is an altogether bootless undertaking.

The ascent is nevertheless by no means a feat of mountaineering. It is simply a long up-hill walk, easily achieved by any man sound in wind and limb, and not peculiarly sensitive to the effects of rarefied atmosphere. At only one point, and that for a short distance, is there any climbing to be done.

The height of the mountain has been very variously computed. Since the first ascent it has grown over 6,000 feet. No true barometric readings have yet been taken on the summit, but a close approximation to the correct altitude has no doubt been attained with hypsometers and aneroids, and by triangulation.

In one of the deep and narrow valleys, at a height of about 7,000 feet above the sea lies the village of Ab-i-Garm—‘the hot-springs,’ from which the ascent has always been commenced. The valley faces east, and that face is certainly

* The following article has been communicated through Mr. A. W. Moore.