

THE
ALPINE JOURNAL:

A RECORD OF MOUNTAIN ADVENTURE

AND

SCIENTIFIC OBSERVATION.

BY MEMBERS OF THE ALPINE CLUB.

VOL. IX.

AUGUST 1878 TO MAY 1880.

(Nos. 61-68).

EDITED BY DOUGLAS W. FRESHFIELD.

LONDON:
LONGMANS, GREEN, AND CO.
1880.

1569

.123

v.9

1878-80

CONTENTS.

	PAGE
Aiguille du Dru, History of an Ascent of the. <i>By C. T. Dent</i>	185
Alpine Accidents and Adventures in 1878	114, 162
Alpine Accidents in 1879	371
Alpine Art in the Exhibitions. <i>By the Editor</i>	37
Alpine Bibliography, 1878-9. <i>By W. A. B. Coolidge</i>	503
Alpine Climbing, Past, Present, Future. <i>By C. T. Dent</i>	65
Alpine Club, Proceedings of the	55, 184, 240, 312, 448, 512
Ararat, An Ascent of. <i>By G. Percival Baker</i>	318
Bordier's 'Voyage aux Glacières.' <i>By the Editor</i>	327
Buet, History of the, with some Notes on Early Mountaineering in the Pennine Alps. <i>By the Editor</i>	6
Col du Géant, First Passage of the. <i>By C. Durier</i>	86
Congress of Alpine Clubs at Geneva. <i>By C. E. Mathews</i>	333
Congress of Alpine Clubs at Paris. <i>By C. E. Mathews</i>	154
Dauphiné, Mountaineering in, without Guides. <i>By F. Gardiner</i>	219
Death of Joseph Brantschen on the Matterhorn. <i>By the Editor</i>	373
Excursions in the Lepontine Alps. <i>By F. Gardiner</i>	57
Gleanings from Cogne. II. The Grivola and Tour de St. Pierre. <i>By R. Pendlebury</i>	72
Gosset's, Mr., Survey of the Rhône Glacier. <i>By A. Cust</i>	431
Graians, Excursions in the South-Western. <i>By G. Yeld</i>	474
Hints on Sketching in Water-colours in the Alps. <i>By George Barnard</i>	78
In Memoriam, Mr. J. H. Pratt, Dr. A. Petermann, Jakob Andereg	119
Maritime Alps, The. <i>By the Editor</i>	137, 385
Matterhorn, from the Zmutt Glacier. <i>By W. Penhall</i>	449
Matterhorn, Ascent of, by the Zmutt Arête. <i>By A. F. Mummery</i>	458
Meije, An Ascent of the. <i>By W. A. B. Coolidge</i>	121
Meije, An Ascent of the, without Guides. <i>By C. Pilkington</i>	411
Mont Maudit, An Ascent of. <i>By H. Seymour Hoare</i>	313
Mountain Excursions in Greece. <i>By F. F. Tuckett</i>	157
Mount Argæus, An Ascent of. <i>By the Rev. H. F. Tozer</i>	462
New Expeditions in 1878	89
New Expeditions in 1879	335
Oetzthaler Ferner in 1875. <i>By Russell Starr</i>	31
Old Tracks, Notes on. <i>By the Editor</i>	484

	PAGE
Rocky Mountain Region of Wyoming and Idaho. <i>By James Eccles</i>	241
Saracens at Saas, and elsewhere in the Alps, Note on the. <i>By the Editor</i>	208
Saracens in the Alps. <i>By W. A. B. Coolidge</i>	254
Saracens at Saas, A Reply. <i>By the Editor</i>	282
Schreckhorn, The, in Winter. <i>By W. A. B. Coolidge</i>	213
Sikaram, Ascent of, Afghanistan. <i>By W. Simpson</i>	288
Täschhorn, An Ascent of the, from the Fée Glacier. <i>By the Rev. F. T. Wethered</i>	200
Topography, Note on the, of the Groups of the Meije and the Grande Ruine. <i>By Henry Duhamel</i>	293
Two new Peaks, the Aiguille de Peuteret, and Jumeaux of Valtorrenche. <i>By Lord Wentworth</i>	1
Weisshorn, The, from Zinal. <i>By G. A. Passingham</i>	427
ALPINE NOTES	45, 165, 234, 297, 381, 436, 489
Aiguille de la Za	170
Aiguille du Dru	381
Aiguille du Midi de Peisey	169
Alpine Huts	165
Alpine Huts and Chains	490
Alpine Meetings	239
Alpine Meeting at Paris	51
Alpine Meetings in Wales	177, 384
Alpine Photography	239
Alpine Pictures in 1879	302
An Alpine Veteran	310
Andes, The	384
Attempt on the Dent du Grant	48
Basodine and Ofenjoch	171
Beginnings of the Alpine Club	50
Chamonix Règlement	308
Chimborazo, Ascent of	489
Col de la Dent Blanche	172
Col Dolent	237
Cotopaxi	45
Cottian and Maritime Alps, Inns in	497
Courmayeur Route up Mont Blanc.	171
Dachstein Group	495
Dauphiné, New Map of	296
Death of J. Brantschen	438
Dent d' Hérens.	49, 382
Disastrous Fire at Meiringen	234
Dolomites in Winter	307, 382
Dom Joch and Lys Joch	309
Excursions in Dauphiné and the Tarentaise	175
Excursions round Pinzolo	304
Exorcising the Glaciers	495

	PAGE
Expeditions in the Bernese Oberland	436
Fatal Accident on Mont Blanc	48
First Ascent of the Schneehaube in the Bernina Alps	439
Glacier d'Argentière, Inn near	496
Glaciers and Meteorology	297
Gosset's, Mr., Survey of the Rhone Glacier.	500
Grand Cornier from the North	239
Groas Glockner, Hut on the	238
Guides' Stories in Alpine Periodicals	436
Hoch Wild Spitze	494
Illimani, Ascent of	489
Insurance for Guides	49
Königspitze, First Ascent from the Suldengrat	167
Legal rights to Glaciers	49
Leukerbad, Ascents near	493
Levanna, The	168
Literature	239
Maritime Alps	383
Meije, The	297
Monte Rosa, an attempt to ascend in 18th Century	496
Mont Maudit	170
Mountain huts in the chain of Mont Blanc	235
Mount Argeus	384
Nauders, Fire at	500
Pale di San Martino	48, 165, 307
Piz Bernina	168
Piz Roseg, First Ascent of	383
Precautions against Snow-blindness	175
Rosengarten Gebirge	238
Sikhim Himalayas	384
Tarentaise, Inns in the	238
Third Peak of Piz Roseg, First Ascent of	168
Winter Ascents	491
Winter Tour in the Dolomites	307
Zermatt and the New Weiss Thor in 1849	173

REVIEWS AND NOTICES :—

Alpine Plants	441
Annuaire du Club Alpin Français, 1878	442
Aria di Monti	445
Carnic Alps	446
Caucasian Literature	182
Glacier Oscillations	442
Guida alle Alpi Cozze	446
Guide-books	311
Hypsometry of Friuli	183
Jahrbücher des Schweizer Alpenclub	178, 443
Matterhorn, Ascent of the	440
Mont Blanc ; Italian Ode, translated into English verse	446

	PAGE
Panorama of the Rigi	447
Peasant Life in Tyrol	177
Petrarch's Ascent of Mont Ventoux	183
Pocket Guide-books	181
Professor Huxley's Physiography	51
Publications of the German Club	444
Rassegna del Alpinismo	512
Roraima	501
Souvenir de Zermatt	447
Studi Geologici sul Gruppo del Gran Paradiso	51
Switzerland Illustrated	447
Trentine Annuario	445
Victor Emmanuel at Cogne	54
Zeitschrift des Deutschen und Oesterreichischen Alpen- vereins	180, 441

LIST OF MAPS AND ILLUSTRATIONS.

Aiguille de Peuteret, from the Col du Géant, <i>to face page</i>	1
Map of the Mountains of Val Formazza	57
The Meije from the Vallon des Etançons	121
The Aiguille du Dru from the S.W.	185
La Meije et la Grande Ruine, Map of the Massifs of	293
Presanella from Monte Tonale	306
The Hut on the Zermatt side of the Matterhorn	371
The Maritime Alps, from the Ile St. Honorat	385
The Maritime Alps, Map of part of	410
The Meije from the Châtelaret, <i>on page</i>	411
The Matterhorn from the Zmutt Glacier, <i>to face page</i>	449



AIGUILLE DE PEUTRETT, FROM THE COL DU GÉANT.

From a Sketch by Mons. G. Leppé.

THE
ALPINE JOURNAL.

AUGUST 1878.

TWO NEW PEAKS; THE AIGUILLE DE PEUTERET AND JUMEAUX OF VALTORNENCHE. By LORD WENTWORTH.

AT a quarter before twelve in the night of August 4, 1877, I left the Hôtel de l'Ange at Courmayeur with the two guides, Emile Rey, of La Saxe (near Courmayeur), and Jean Baptiste Bich, of Valtornenche, to attempt the ascent of the Peuteret. We climbed up the rocks of the Fauteuil des Allemands near the waterfalls by moonlight, arriving at the plateau known by that name soon after four in the morning of the 5th. Here Rey's brother, who had come so far as porter, left us, and after a halt for breakfast we went on, ascending some avalanche snow-slopes to our right as far as the foot of the rocks, then for three-quarters of an hour up rocks and patches of grass to the lower end of a broad slanting couloir of rock leading in a straight line to our left in the direction of the highest peak. Soon after entering the couloir we came to a small cavern in two chambers, evidently much frequented by chamois, which would make admirable sleeping quarters. This I propose to call '*La Balme des Chamois.*'

After going up the couloir for two hours with no difficulty, we arrived at an absolute precipice at the foot of which we had to search for two hours before finding a chimney, or rather a succession of chimneys, up which we climbed with some difficulty; one place in particular was somewhat unsafe, a slanting ledge of rock with imperfect hand and foot-hold. This place I would call '*Le Mauvais Pas.*' By about midday we got to the level of the ridge separating the Fauteuil des Allemands from the Glacier de la Brenva, whence we turned away again to the left and ascended, with no great difficulty but with many very long steps, till we reached a sort of shoulder, on our right an extraordinarily steep snow slope falling down to the upper Brenva glacier, to our left a vertical precipice dropping down to the Fauteuil des Allemands. This crest might be called '*La Neige de l'Épaule,*' it is distinctly shown in

M. Loppé's beautiful sketch of the Peuteret Needle, being, except the very summit, the only point of our route visible in his drawing, which is taken from the Col du Géant, while our course lay within the vast rocky hollows over the Fauteuil des Allemands. We went along it for about fifty yards till our progress was stopped by the final peak. Fortunately we perceived some ledges to our left that traversed the face of the great abyss. We crept along them with little actual difficulty, though hanging on over sickening precipices. This place I would call '*Le Passage du Grand Gouffre.*' Thus we got to the side of a small snow-slope near the top on the south-east face; thence looking up we saw the two summits, the lower one to our left, very difficult, probably impossible of access, the higher to our right perfectly easy, and we reached it soon after two in the afternoon.

We immediately set to work to plant a flag, the St. George's cross of England, and to baptise this point, which, according to the aneroid, was 2,600 mètres above Courmayeur. I named it, to distinguish it from the lower or southern summit, '*Aiguille de la Yola,*' after Madame Caccia Raynaud, an intrepid and accomplished Italian Alpinist then staying at Courmayeur.

The summit, on which there is plenty of room, consists of two short ridges at right angles, one in the direction of Mont Blanc, the other toward the lower summit.

The view of Mont Blanc, and of the glaciers of Brenva, Fresnay, and Brouillard is magnificent. These form together the principal feature of a superb panorama. I saw the track of Mr. Eccles's party on the steep snow-slopes below the precipices of Mont Blanc, which he had scaled a few days before, I believe. Another charming part of the view is the glimpse down the valley of Morgex.

At three yards from the summit of the Aiguille de la Yola I noticed a mountain rat, which slipped into a cleft of rock as soon as it saw me. Equally close to the summit I gathered some moss with pink and white flowers, then in full blossom. Fifty yards lower I found some ranunculuses, also in flower, at the height of upwards of 12,600 feet.

After a stay of a little more than an hour we started on our way down, and before night we had descended all the difficult places. At 9 P.M. we reached a little ridge (3,000 mètres above the sea) with some snow lying on it, and jutting out from the great couloir three-quarters of an hour above the '*Balme des Chamois.*' Here we passed the night, and I propose to call it '*Le Reposoir.*'

Next morning, August 6th, we started at 4.30 A.M.

and reached Courmayeur at nine. In descending we used the rope in five difficult passages, two of which were below the Fauteuil des Allemands.

This ascent is the most difficult climb up steep rocks with which I am acquainted, though the Matterhorn would be far more formidable without its ropes; but of danger there is little or none with good guides to a practised climber.

From the Fauteuil des Allemands there are seven hours of rock-climbing to the summit of the Yola, and quite as much for the descent. Some might, perhaps, do it in less, but others would take longer. It would be best to sleep in the Balme des Chamois, whence the summit can be reached easily in six hours.

On Thursday, September 6, I left the Hôtel du Mont Cervin, at Breuil, at a quarter to two A.M., with the same two guides. In a little more than an hour we came to a ch^âlet, which, like some others in Valtorrenche, is a very long vault of masonry immensely thick, and with a great mass of earth on the roof. The interior is like the tunnel of a railway, and in its great length must hold 100 cows. There was no one there; it felt quite warm within those walls, thick as a mediæval castle. We lit a fire in one end, where the cowherds have their beds (*ou la couche de l'honnête homme, de la paille, vide la Périchole*), and make cheese. We waited for an hour, for Bich said we should get to the rocks otherwise too soon; we must have daylight, not merely our lantern. Leaving this cow *cellar* (as I must call it, rather than stable) before four, we went up some steep grass slopes and rocks to the foot of the first cliffs, where we arrived at five, just as the day began. It was bitterly cold till we warmed ourselves by drinking rum, but clear and lovely weather—a few autumnal mists in the valley and the last tiniest scrap of a moon in the midst of the dawn, so clear that I saw the man in the moon in the black part of the moon. There were some sheep here that followed us over a patch of snow to the foot of the cliff, up which we went, slanting to the right for several hours easily—here and there a steep place—till we crossed a couloir, and for an hour went straight up extremely steep, smooth, difficult rocks, till we came to a towering wall, which forced us to turn to the right into an extremely steep couloir, which ascended first straight, then slanting round to the left behind the lofty wall. Up this couloir we went, over steep slippery slopes of rotten rock, and now and then a few steps on a steep patch of snow. By ten o'clock we got to the top of this horrid couloir, and found

ourselves on the ridge which divides Valtornenche from Valpelline. Here we were at the foot of the Punta Sella of Les Jumeaux (which had been before ascended by Corona), over which we intended to go to reach the virgin summit of the Punta Giordano. We ate some breakfast and then started for our two summits, which are so nearly the same height that I do not know which is higher; we were, at our eating place, only 100 mètres below them. First for a short distance up a little ridge and slope of snow, as we thought, but it turned out to be ice hard as rock; fortunately Rey had only to cut perhaps twenty or thirty steps, the rest of the ridge was easy rock up to the top of the Punta Sella, which we reached at eleven, and found the names of Corona and his guide and a little flag placed by them. Corona has twice been up the Punta Sella, but both times failed in his object—to scale the Punta Giordano. There is a fearful abyss between the two, but Rey went down first a little way to look, and finding a place, which though perfectly vertical for six mètres, had some corners for hands and feet, called to me and Bich to descend there after him. Then we went along a ledge for about ten mètres, overhanging a gulf almost as terrible as that of the Yola; then we turned a corner and went down to the left or west of the ridge, down another steep rock, and we were in the col between the two Jumeaux, and up we went to the summit of the Punta Giordano, finding only one difficult place, a vertical rock four mètres high, which we turned in descending. I arrived first at the summit. I may add that Rey thinks it is eight or ten mètres higher than the Punta Sella, but of this I do not feel quite sure. The first thing we did was to break off the highest point, which was very difficult, it was so hard; but at last we succeeded, and it fell into my handkerchief.

Then we fixed the English flag, which Bich had carried with much difficulty, for the pole always caught in difficult places in the rocks. When the flag was fixed tight, the pole leaning coquettishly on one side towards the valley, and a boisterous wind blowing it out, it seemed to us the prettiest banner we had seen—the guides also exclaiming how charming it looked.

Bich baptised the point '*Punta Giordano*,' with the full and proper formula, pouring wine instead of water, and then we had to hurry back. In an hour we reached our breakfast place and lunched there very pleasantly; at two we began descending the dreadful couloir. Rey was last; in one place a great rock gave way under him and crashed down close to me; I was able to spring into shelter; it cut the rope between Rey and me, he had to hold on for his life by his fingers, as his feet

were in the air; had he fallen, Bich and I could not have saved him, for the rope was broken. Lower down, just before we got to the narrow mouth of the couloir, down there swept through it a volley of blocks of ice, which made us tremble as we passed through it five minutes later.

After leaving the couloir, we found a steep cleft to the side of the smooth, difficult, steep rocks by which we had mounted; so we went down this cleft instead, and found it much better. When we had passed the last bad place, so thick a fog came on that we had the greatest difficulty in finding our way down the lower cliffs, which however, with the help of occasional traces of our footsteps in the morning, luckily we did, and we reached the snow, where the sheep were in the morning, by 6.30. Thence, we went down pretty quickly; as we were going down, our friends the sheep kept throwing stones down upon us, but we were not hit. We reached Breuil at a quarter to eight, where the hospitable and obliging landlord gave us an excellent supper.

My two guides deserve the highest praise for skill, courage, and all the other virtues of their profession. Rey, though only thirty, is the best guide I am personally acquainted with. I feel that I must explain to my readers the egotistical character of this account of the ascent of the Jumeaux. It is taken almost verbatim from a letter I wrote to a friend two days after, with no idea of its being ever published. I wrote nothing else about it at the time, and can only send it as it stands with a few corrections that occur to me in the course of copying. But I hope it may contain all the facts likely to interest the climbing world.

I may take this opportunity of mentioning an ascent I made of the Grand Paradis in July 1877, with Laurent Lanier and Emile Rey. Our route is perhaps already known, but I have not been able to learn. We went in an almost perfectly straight line from the glacier of La Tribulation, up the rocks and ice wall to the summit, about half-way, I think, between the other two routes I have heard of from the Plan de la Tribulation. It is, I think, shorter than any other, and though perhaps steeper, probably easier.

THE HISTORY OF THE BUET, WITH SOME NOTES ON
EARLY MOUNTAINEERING IN THE PENNINE ALPS. By
the EDITOR.

THE curious little monument to the founders of the Love of the Alps, which stands opposite the inn on the Montanvert,* and is now devoted to the orgies of Chamonix mule drivers, still bears on its front the original dedication 'à la Nature.' It was originally proposed that on the other three sides should be placed the names of De Saussure, Bourrit and De Luc. De Saussure is still known throughout the world; Bourrit's fame survives only among students of the Alpine literature of the last century, and, although it has recently been burnished up by Mons. Durier in his admirable book on Mont Blanc, it is still dull in England; De Luc is even less known.

It is a sufficient reason for choosing a peak in some respects so insignificant as the Buet for the subject of the first chapter I add to Mr. Longman's papers, that it enables me to vindicate the fame of the two early mountaineers who were the less known members of this mountaineering trinity. But the history of the Buet also claims attention in its relation to that of Mont Blanc, to which the lesser mountain served as a stepping-stone; and the narratives in which the first attempts on it are recounted are exceptionally characteristic and amusing in themselves.

In dealing with the mountains of Savoy, we do not have, as in central Switzerland, to look into remote authors. There is scarcely any mention of the Mont Blanc range in books prior to the seventeenth century, and maps show that so small was the knowledge of this region that Mont Blanc and the Buet were often lumped together as 'Les Glacières,' and that nobody knew exactly whether the great mountain seen from Geneva was north or south of the valley of Chamonix. The history of early mountaineering in this region is the history of the little band of explorers of whom De Saussure was, by his accomplishments, the most prominent, and Bourrit the most persevering.

The Buet was, I believe, the second glacier peak in the Alps to be climbed, its predecessor being the Titlis. Its first ascent deserves to be followed in detail, for it was the beginning of mountaineering in Savoy; and it is recorded in a very picturesque and detailed contemporary narrative.† It was made in 1770

* I follow the usual incorrect spelling. Mont-en-vers, the pasturage at the back, is the derivation.

† 'A Relation of a Journey to the Glaciers in the Dutchy of Savoy,'

from the Sixt side by the brothers Jean André and Guillaume Antoine de Luc. They were the sons of a Geneva watch-maker, known by his religious and political writings, and a friend of Rousseau, whose influence is constantly evident in their writings. Guillaume was the author of a few scientific tracts. The eldest brother, Jean André, was an adherent of the popular party, and was sent as envoy to Paris in 1768, and on his return elected a member of the Great Council of his native city. His inclinations led him, however, to give up politics for physical science. In 1762 he submitted to the Paris Academy his 'Researches on the Modifications of the Atmosphere,' which was recognised at once as the best work which had yet been produced on the use of meteorological instruments. De Luc, however, spent ten years more on his book before publishing it. He now entirely gave up his trade, and coming to England was made a member of the Royal Society and obtained a permanent post as reader to Queen Charlotte. One of his works, a series of 'Lettres physiques et morales sur les Montagnes et sur l'Histoire de la Terre et de l'Homme,' was dedicated in 1778 to the Queen of Great Britain. It is described in the preface as the outline of a work on cosmology, or nature and man's place in it. The letters describe the Lake of Geneva, Interlaken, Grindelwald, and Lauterbrunnen—the descriptions being interspersed with many reflections on the happiness of a country life, and the simplicity of Swiss peasants. Rousseau, who is often quoted, is evidently the source of most of M. de Luc's cosmology.

De Luc died at Windsor, at the age of ninety, in 1817. As a scientific student he would appear to have deserved respect, but he was also a courtier and a universal philosopher, and in consequence he sometimes rather amuses than edifies the modern reader, particularly when he is led by the 'ecstasies in which he often finds himself on the mountains,' into a long assault on materialism, and apologises in a proportionately long foot-note for introducing 'discussions too far removed from the objects of attention of a QUEEN.'

It was in August 1765 that the two De Lucs started to attempt the Buet for the first time. From the neighbourhood of Geneva, Jean had observed to the north of the 'pikes in the form of obeliaks' which rose in a forbidding fence round the mighty dome of Mont Blanc, a mountain whose summit, although always covered with ice, seemed to him accessible and proper for his experiments.

translated from the French of M. Bourrit, Precentor of the Cathedral Church of Geneva, by Cha. and Fred. Davy. 2nd Edit. Norwich, 1776.

‘He endeavoured then to inform himself of the name of this mountain, the place where it was situated, the road necessary to be taken to arrive at it, and whether or not it was to be ascended; but no person could be found that knew it, nor could he gain the least intelligence with respect to any of his questions; he was obliged, therefore, at all events to take a journey in search of it and endeavour to find it himself.’ Such a passage and the following narrative give a curious idea of the state of ignorance in which Geneva lived of objects within its daily horizon, even after ‘the discovery’ of Chamonix. With many doubts as to the right road, anxiously looking out for any glimpse of the snows, and seriously disquieted when they lost sight of them, the two De Lucs arrived late at night at Sixt, where ‘their guide gave them no hopes of finding any accommodation.’ Fortunately, despite the lateness of the hour, the convent opened its gates and received them most hospitably. The peasants of the village could still give no information as to the snow mountain they were in search of, but offered to lead the travellers to some châteaux, where a hunter who knew more might possibly be met with. This plan was carried out, the châteaux reached, and the hunter secured. But they followed him with uneasy minds, for their frozen summit had entirely disappeared. When after some rough scrambling they reached the ridge of rocks known as the Grenier des Communes, which had long formed their skyline, ‘they perceived themselves upon the brink of one of the most frightful precipices, which separated them from the summit they came in search of.’

There was nothing for it but to return, after having gazed ‘with admiration as well as horror’ at Mont Blanc, which appeared before them in all its majesty. An accident which happened to the most important member of the party, the thermometer, compelled them to return to Geneva.

It was not till 1770 that the De Lucs again attempted to carry out their design. Led by an ‘apprentice to a hunter’ they climbed ‘from one jutting point to another up the clefts of an immense wall of stone which was almost perpendicular,’ only to find themselves ‘upon the very same precipice they had been five years before.’ They consoled themselves by scrambling to the highest point of the ridge, the Grenairon, although at one place they had to take the lead from their poor-spirited guides. The conduct of one of these men was most reprehensible. ‘Fatigued with the labour he had undergone, and in a fit of laughter at the folly of taking all this trouble to boil a little water, he threw himself unluckily with all his weight on Jean De Luc’s foot and badly sprained it.’ The ‘author of the mis-

fortune' then abandoned his employers, in order to go down and milk his cows. De Luc was equal to the occasion both as a philosopher and as a mountaineer. He candidly imputed the man's behaviour to his mistaken sense of duty to his master (the owner of the cows) rather than to want of feeling. Further, he contrived to slide upon his back 'down 1,500 perpendicular feet.' Night then came on, and they were compelled to sleep out, making a barricade to prevent themselves from rolling down the steep. Next morning De Luc's foot was less painful, and he was able to descend to Sixt.

On the following day the village fair was held, and the De Lucs learnt from some of the assembled peasants that the snow dome they were in search of was known as the Buet, a name derived, they were told, from Bovet, an upper pasturage near the snow.

A month after, in company with a hunter, they ascended to Les Fonds, now well known from the description of Mr. Wills, who has built himself a house in this lovely spot, and has written of it with an owner's appreciation. No raptures, however, can exceed those of De Luc on this 'most superb amphitheatre,' 'delightful plain,' 'romantic solitude,' which 'they could not cease admiring.' Rain drove the brothers back to Sixt, but at the instance of the monks they waited until a fine day enabled them to return with better prospects to Les Fonds. Next morning they were off at daybreak, and by 7 A.M. had reached the 'Plain de Lechaud,' where they saw three of the 'native burghers' of the country, that is to say, chamois. Proceeding, 'they enjoyed for two hours this sensible succession of new subjects without any other inconvenience than that of walking up an exceeding steep slope, which was nothing to their spirits and resolution.'

In plain language, they were drawing near the snow, and the upper slopes were still hard from the night's frost. Having before experienced the inconvenience of crampons, 'which were apt to turn upon the foot and deceive them,' they had provided themselves with thick woollen socks to put over their shoes, by means of which, and their staves pointed with iron, they 'presumed it possible to step with the utmost security. Their shoes, however, were absolutely improper for such an undertaking.' Happily the guides had broad soles and hobnails, with which they crushed footsteps through the frozen crust. It was about noon when they gained the summit of the glacier, 'which commanded in a manner at one view all the straightes of the Alps, of whose pikes there were but few which raised their points above them.'

'For long they were absorbed in contemplation of the scene

before them. When their attention returned upon themselves they found that they were standing only upon a mass of congealed snow which jutted over a most frightful precipice.' Their first impulse was to retreat with all speed, 'but soon reflecting that the addition of their weight to this prodigious frozen mass which had been supported thus for ages could have no effect to bring it down, they laid aside their fears and went again upon that horrid terrace.' After a halt of three-quarters of an hour, and two experiments, they retired to some rocks a couple of hundred feet below the top for another hour and a half. During this prolonged stay, 'they were forced by the absence of any disagreeable sensation to remark what a wonderfully adaptive machine is the human body, whose equilibrium remains undisturbed within while the atmosphere without is so changed in density.'

The descent was easy. The De Lucs observed with envy, but did not venture to imitate, the mode of progression of their guides who glissaded, as we now say, that is, slid leaning on their poles down the slopes. They found out, however, another method which they thought very agreeable. It consisted in a series of jumps, made 'with regularity and due deliberation,' and would seem to have been modelled on the gait of a kangaroo. At the foot of the snow they were saluted by the whistles of marmots, which suggested the signals of banditti. Sixt was regained after nightfall.

A second ascent* of the Buet was made in 1772 by Mons. De Luc, his brother, and M. le Ministre Dentan, from the châteaux of Anterne by a different route, recommended by their guides. De Luc's object was to make further observations. Unluckily, in the châteaux he broke his thermometer. The account of the accident is a specimen of the naïve enthusiasm of these early observers. 'I looked with emotion for my thermometer; it was broken. I gave a cry which shook the cabin.' Happily, the hygrometer survived to reach the summit, and afterwards to be honoured with a place in Queen Charlotte's apartments. The climbers took eight hours to reach the top, and on their return they were benighted and caught in a thunder-storm among the cliffs of the mountain. From this unpleasant situation they were rescued by the mistress of the châtlet in which they had passed the previous night. Her courageous conduct and refusal to accept any recompense suggest to De Luc some of his usual reflections on the virtues

* 'Lettres sur les Montagnes,' De Luc, Geneva: 1778, in which a published account of the expedition by M. Dentan is also referred to.

of the mountaineer, and he concludes his story with the exclamation, 'Je me reprocherois toujours si Anterne pouvoit devenir un lieu fréquenté!' Elsewhere, however, with a not uncommon inconsistency, he pronounces the Buet to be 'the most engaging to a man of taste of all the mountains of the Alps,' and expresses a hope that some of his readers may undertake it.

The history of the Buet now brings a new person on the stage, the enthusiastic Bourrit. De Luc was an enthusiast in his love of the mountains, but he was a cool and somewhat affected lover in comparison to Bourrit: his homage, if genuine, is scarcely spontaneous, and his roar was always made up somewhat in Rousseau's vein. He indulges in long and shallow generalities about the plan of the universe or the virtues of the mountaineer; while Bourrit gives a truly-felt picture in words or a few homely touches. By the side of the in every way larger intellect of De Saussure, the rich man with the finest house in Geneva for his home and unlimited means at his disposal, the man of scientific grasp who used his advantages to attain definite and worthy aims, and wrote with the calm and measured precision of a man of science, if with some lack of imagination, Bourrit, perhaps, is no imposing figure. Yet in his own day he was a well-known character; his works obtained for him the title of the 'historian of the Alps;' and his enthusiasm drew from De Saussure the avowal that 'M. Bourrit mettoit encore plus d'intérêt que moi à la conquête du Mont Blanc;' and from Goethe the description, 'Ein passionirter Kletterer.' His 'Voyage aux Glaciers' was translated into English and German, and every visitor to Chamonix was familiar with his name. Brought up at Geneva as a miniature painter, he does not seem to have found his vocation till the age of twenty-two, when a visit to Les Voirons suddenly awakened in him a passion for the mountains. Portrait-painting was henceforth given up. He obtained through his friends a post as precentor in the cathedral, which gave him enough to live on, and his abundant leisure was spent at the feet of his beloved mountains. He painted and sold his pictures, or illustrated his books with them, remarking complacently on their fidelity as compared with those of Gruner, whose artists 'were rather men of *taste* than draftsmen;' or with 'a plate of Mr. Vivaré, in London, representing the icy valley of Montanvert, in which there is hardly so much as one stroke taken from nature.' Bourrit dropped now and then his mite of observation into the hand of science. But in truth his pictures and his science were a pretence, or at least secondary. He goes to Chamonix and wanders up and down the flanks and side of

Mont Blanc, because to him high mountains were a feeling. In spirit he is the type and ancestor of the modern climber, who feels a passion which he can hardly explain for the free air of the heights and the glories of the eternal snows. He was the first victim of the true mountain mania, which has of late years become so common a disease. In the flesh, perhaps, Alpine clubmen would scarcely acknowledge him as a fore-runner. Despite his six ascents of the Buet, Bourrit was clearly no great climber. His guides seem more than once to have made some excuse for leaving him behind. On the Chermontane Glacier he and his dog Loulou were sadly put out by some commonplace crevasses. Despite all his endeavours, he never stood on the crowning ridge of Mont Blanc, although, if we may believe his own estimate in such a case, he came within ten minutes of it. His disappointment was aggravated by the fact that one of his companions, an Englishman, Mr. Woodley, afterwards Governor of the Leeward Islands, reached the top. The third traveller was a Dutchman named Camper, who gave up before Bourrit, after having been nearly blown away. According to his own story it was only the skill of his twenty-two guides and the stoutness of his coat-tails which saved him from being carried up to heaven at once in a whirlwind. Bourrit's chief feat was the discovery of the Col du Géant, unknown to the Chamoniards of his time. The contradiction between Bourrit's own feelings and the language in his day hallowed by custom leads him constantly into amusing phrases. We hear of 'horribles beautés.' At one moment rocks are 'beautiful' and glaciers 'superb'; at the next we are told of the head of Val de Bagnes, the meeting-place of three glaciers, 'L'aspect de ce lieu est horrible.' In his own enumeration of the pleasures of the Alps we recognise his capacity to appreciate them, while elsewhere we smile at the imagination which ascribes the sentiments of a disciple of Rousseau to the shepherds of the Rheinwald.

In another matter Bourrit was, let us hope, a worthy fore-runner of the Alpine clubman. Petty rivalries had but a small hold on his soul. So long as Mont Blanc is ascended, so long as his beloved mountains are visited and worshipped as he would have them, he is content not to be himself the first conqueror. Once only do we find traces of jealousy in his writings. A certain Mons. Bordier, on the strength of having seen one glacier, ventured to publish a 'Voyage Pittoresque' while Bourrit's was in the press. This was too much for the good man, and in his list of the men of scientific renown at Geneva poor Bordier only comes in with some others

as an author of works not worthy of particular mention. It is perhaps owing to this quarrel that the earliest statement of the glacier theory subsequently known as Rendu's was so effectually passed over that it escaped for many years the notice even of Professor Tyndall, generally an eager rehabilitator of neglected merit, and was not published at all in England until it appeared recently in his 'Forms of Water.' Yet Bordier's one glance had taught him more than the 'historian of the Alps' learned in all his rambles.

The motion of the ice was a problem rather shirked than explained in the old Swiss school of Scheuchzer and Hottinger. These physicists had marked the advance of the ice as shown by the progress of glacier-tables, the different layers of snow, less compressed, as they lay nearer the upper surface, the moraines. But they made little progress in putting together these scraps of observation, or in forming on them a reasonable theory, though here and there a half haphazard guess reads like a start on the right track. Sometimes we are told that the body of the glacier is formed by a collection of many winter coats, frozen one on the top of the other. We must assume that some wonderfully hard winter at some unknown date supplied the foundation. If this does not satisfy the inquirer, he is asked to bear in mind that the freezing of water in the crevices will increase the volume of the mass and lead to its extension, and also, that in consequence of the diminished pressure of the outer atmosphere, the air shut in the hollows of the ice will expand. Other writers, Altmann and Cappeller, tell us that the advance of the whole body is due to the weight of the upper snow-fields pressing upon what lies below, which is loosened from the rock by the constant melting of the under surface. But the nature of the advance, its steadiness, and, with certain qualifications, its uniformity were still undiscovered.

At the root of the old writers' difficulties, keeping them far from the right track, lay the firm conviction expressed by Sebastian Munster in 1543, and repeated constantly afterwards, that glacier ice 'is not very different from crystal.' He stated that 'glacier ice is neither snow nor ice, but hardened ice, which never melts on the mountain-tops, but, having for two or three thousand years clothed the heights and filled the hollows, has grown almost as hard as stone.'*

* This remark, I may point out, is some evidence against the supposed sudden growth of the glaciers, and the consequent destruction of the Viescherjoch and other passes.

In 1618, it is true, a sceptical Frenchman, encouraged by the retreat of the glaciers in his time, attacked the prevailing belief in some exceedingly dull verses:—

‘Ecrivains qui couchez dans vos doctes esprits
Le crystal être glace, où l’avez-vous appris?
Si le crystal est tel, pourquoi dans les vallées
Les montagnes de glace en ce temps écroulées
Fondent-elles au feu?’

And so on for many pages. But the superstition was too strong to be slain by such a blunt weapon as his verse.

Yet if the old authors were ignorant of some of the properties of ‘glacies inveterata’ to which we attach most importance, they had an eye to its practical uses. Wagner, a Zurich doctor, who was inspired by the teaching of the Inductive Philosophers, ‘inter quos magnus ille Angliæ cancellarius Franciscus Baconus Baro de Verulamio faciliè principem obtinet locum,’ to put together a medley of facts about the geography and natural history of the Alps—including, of course, some Phenomena and *Lusus Naturæ*—tells us ‘nonnulli eâ refrigerant suum potum æstivo tempore.’ It was also used medicinally in fevers and dysentery, and, according to the personal experience of a certain Schröder, was proved efficacious ‘in odontalgia pertinacissimâ.’

When we turn from such gossip as this to Bordier’s little pamphlet we find ourselves in a completely changed atmosphere:

‘Au premier aspect des monts de glace une observation s’offrit à moi et elle me parut suffire à tout. C’est que la masse entière des glaces est liée ensemble et pèse l’une sur l’autre de haut en bas, à la manière des fluides. Considérons donc l’assemblage des glaces non point comme une masse entièrement dure et immobile, mais comme un amas de matière coagulée ou comme de la cire amollie, flexible et ductile jusqu’à un certain point.’

There is a gulf fixed between such language and the old talk about ice being a form of rock-crystal, or even the crude theory of the dilatation of the ice (started by Hottinger and Scheuchzer, afterwards named after its expositor Charpentier, and lately recalled from the dead by the distinguished French architect Mons. Viollet-le-Duc), which rather shirked than explained the advance of the glaciers.

Mons. Bordier’s sentences quoted above may only be the statement of an unproved hypothesis. But at a date when De Saussure and all his contemporaries were hammering along the old track he boldly started off in a new direction. He dis-

covered in a moment of happy inspiration the direction in which the key of the problem was to be sought, and gave a suggestion, which was worked out by Rendu and Forbes, and has deservedly gained him a place and a name among the questioners of Nature.

As an Alpine artist Bourrit deserves, in my opinion, our high esteem. He was the first draftsman of his time to draw mountains as they are. His predecessors, like the 'high æsthetic critics' of the present day, looked on them as rude masses, whose lines require to be reduced to simplicity and symmetry by the 'Man of Taste.' I know not whether any of his paintings still exist; they were numerous, and one of them was in the 'cabinet' of Louis XVI. at Versailles. The fourteen sketches intended to have been etched as illustrations to the English edition of the 'Journey to the Glaciers' are said to have passed into the hands of a gentleman in England. All we know about them is from Bourrit himself, who in the preface to the English edition of his 'Voyage aux Glaciers' tells us how they came to be made.

He observes 'that the first time he went into this romantic country the number and immensity of the objects which struck his sight at the same time presented difficulties it was impossible for him then to surmount, not having formed the least idea of them before he set out. His second attempt was more successful, when he not only determined his choice of the prospects, but was enabled to invent a new method of taking them with greater exactness.

'His end thus answered, he brought back fourteen sketches, which those who are pleased with these subjects, as well foreigners as natives, have judged worthy the attention of the curious.

'He takes upon him to assure the public that not only the larger masses are designed in these views, but that he has made out even the smaller, and that nothing is added from imagination only, as in almost* all the drawings of these places he has had an opportunity of seeing. That he had examined the print from a plate of Mr. Vivaré in London, representing the icy valley of Montanvert, of which he affirms there is hardly as much as one stroke taken from nature; and that another of the valley of Chamounix is equally false (he means the thirteenth plate in the account of the glaciers of Switzerland, by

* The author has excepted from this censure two views of Chamounix, drawn with great care and exactness by Mr. Jalabert. [Original note.]

Mr. Grouner); all which will not appear extraordinary, when we are informed that those gentlemen who had hitherto gone over the glaciers* were rather men of taste than draftsmen. He has experienced besides that one journey is insufficient to render drawings of this sort perfect. That he found it highly necessary to attend to the peculiar state and condition of the air and weather, of which we never can be secure, and which may prove very unfavourable to the designer upon a single visit or in one season only, though the completion of his sketches must depend upon their clearness and serenity. We go to the valleys are struck with admiration trace out some loose lines in haste add a few revising touches by way of memorandums, and at our return imagination does the rest.

‘He makes no scruple to say that it is after this manner most of the views which accompany the description of the glaciers of Switzerland have been executed, and that of the seventeen plates which adorn this work there are only three to be relied on for their exactness; though he acknowledges, at the same time, they are engraved with taste.

‘With respect to the species of engraving for his own drawings, he gives the preference to etchings (if they may be called engravings), as more in the style of a painter, and he apprehends the biting-in with aquafortis will have a freer effect in these subjects than the strokes of the graver. He adds another reason for the preference of etchings in this instance, which had more weight with him perhaps than the former—namely, that the etchings could be finished by himself. A love of truth and exactness seems to operate very powerfully with our author, and these could not precisely be attended to by a person who had not at least been present at the taking his designs; the engravings might have had an elegance and force, but a real connoisseur, as he very justly observes, will in this case give the preference to a plate of inferior merit in which he can depend upon the faithfulness of the representation.’

A catalogue of the sketches which were to have been etched follows this preface. One of them is oddly described as ‘View particularly interesting to a Genevois, taken near the summit of one of the Needles,’ probably the summit under the Aiguille de Charmoz, from which Coxe tells us ‘a Genevese unfortunately fell and was dashed to pieces.’

Book illustrations are at the present day all the material we

* Glaciers are beds of ice accumulated upon the declivities between mountains. [Original note.]

have to judge from; but from these it is evident that if Bourrit was the ancestor of the tourist he was also the ancestor of the Alpine artist. As might be expected from a miniaturist the plates in his own book are laboured, and the foreground is beautified in the landscape gardener's style with 'bosquets.' He would seem to have had a failing for painting reflections in water, and in one instance he could not refrain from turning the Arve into a glassy stream. But the mountain outlines are generally firm and correct. For the period this is no slight praise, as may be seen by contrasting Bourrit's plates with the more ambitious illustrations to Albanis de Beaumont's folio 'The Pennine Alps.' In the drawing of Chamonix in that work Mont Blanc itself is ignored, and the Dôme and Monts Maudits reign in its stead. When we turn to the plates which Bourrit furnished to De Saussure we are astonished at the accuracy of topographical detail attained in such difficult subjects as the chain of Mont Blanc from the Allée Blanche, and still more at the power and vigour shown in many of the blotted-in sketches of individual peaks. The rock structure was all important for De Saussure's purposes, and doubtless the connection between them was most advantageous to Bourrit as an Alpine artist by necessarily fixing his attention on facts and forbidding any indulgence in prettinesses of the imagination.

Such was the knight who advanced to the attack of the Buet from the side of Val Orsine—the first inventor of that lately somewhat hardly-pressed resource of climbers the 'new route.' Bourrit was by no means the man to take an easy peak by surprise; his approaches were always made in due form. He summoned a council of the inhabitants of Val Orsine, which, as they did not know the name of Buet, naturally led to no result. Vexed at his failure, he rather hastily set off to make the tour by Cluses to Sixt, but meeting at Les Ouches the former curé of Val Orsine he was induced to retrace his steps. Accordingly a second council was held, and a hunter made the brilliant suggestion that possibly the peak Bourrit called the Buet, might be the Mortine of Val Orsine. Accordingly a start was made by the Valley of the Eau Noire, but a cloudy day discouraged the climbers and induced them to return. The impulsive Bourrit set off the second time for Geneva, got as far as Sallenches, and then found a clear sky irresistible, and rushed back to his mountain. This time all went well, and eight hours after leaving Val Orsine the party found themselves on the desired summit. Bourrit did not under-estimate the importance of his success, for 'from this moment he conceived the greatest hope for the history of the earth as well as for physical

science.' The view he describes with rapture; but the best proof of his enjoyment is the fact that he repeated the expedition no less than six times in subsequent years. His memory still lives in the name of 'Le Table au Chantre'—the Precentor's Table, given to a huge boulder under which he rested some distance below the summit on the side of Val Orsine.

His hopes for physical science were in some measure fulfilled by the ascent of De Saussure in the following year, 1770. This expedition does not present from the mountaineer's point of view any features worth record, although it furnished opportunity for a lengthy review of the structure of the granite peaks of the Mont Blanc chain and a digression on the rarefaction of the atmosphere.

It is worth notice that De Saussure on this occasion emphatically remarks that those only who have given themselves up to reflection on Alpine summits know how much deeper, wider, and more luminous their thoughts become on these heights than when the frame is confined within the walls of a study. Modern philosophers are inclined to take the opposite view, and M. Paul Bert, having in the course of his ingenious experiments introduced himself suddenly into a compartment of air rarefied to represent the atmosphere at 15,000 feet above the sea-level, found himself obliged to write under 7×13 'too difficult.'

Bourrit, whose relations with De Saussure now and then recall Boswell's with Dr. Johnson, had the satisfaction of supplying the *savant's* work with a panorama of the view from the summit. It is drawn in the old fashioned circle, but is fairly correct. The Bietschhorn is recognisable in 'la Fourche,' Monte Leone in the 'St. Gothard,' and the Weisshorn in the St. Plomb (*sic*). Bourrit very properly drew in the centre of his illustration the singular icicle-fringed wall in which the snow-dome of the Buet formerly broke away towards the north.* De Saussure thereupon went out of his way to say in a note that M. Bourrit was solely responsible for this feature, of which he had no recollection. The man of science in this instance proved himself less observant than the artist. I was inclined to think Bourrit had at any rate exaggerated the feature, but on reference to an old photograph I found he was more than borne out. Bourrit was generally, but, as I think, somewhat unjustly, accused of habitual exaggeration by his contem-

* Owing to the recent diminution of the glaciers, the cornice on the Buet has, within the last ten years, disappeared, and rocks have come to light in many places where before there was a sheet of snow or ice.

poraries. As a writer there is some colour for the accusation, though not so much as has been made out. If he saw a statue of Neptune in a crevasse on the Bossons Glacier, it does not require an exalted imagination to discover such freaks of nature. Many other people have fancied the haze of the S. horizon the Mediterranean. The first Frenchman who got up Mont Blanc went much further, and characteristically distinguished Venice floating like a halcyon on the waves of the Adriatic!

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 with a suitable inscription erected to his memory.

A M. Exchaquet discovered a third route to the top of the Buet starting from Servoz and passing by the Col de Salenton, which seems to have been the most used at the beginning of this century. Albanis de Beaumont in 1806 tells us that several ladies—his own wife among the number—had ascended the mountain. The ascent has now become a tolerably frequent excursion from Chamonix or Sixt. By the combination of De Luc's and Bourrit's routes travellers can pass easily in the day from one place to the other.

It has been reserved for M. Loppé to point out the best use of this noble belvedere. From no other point can the glories of sunset on a lofty summit be seen so easily. It is possible to run down in an hour to the little inn at Pierre-à-Bérard from the top, so that no one need have any fear of lingering to see the last rose tints fade off the cupola of Mont Blanc. Only those who by design or accident have reached a high peak or pass late in the day know how infinitely more beautiful the effect of the panorama grows as the shadows lengthen, and the poetry of evening supplants the prose of midday.

Mr. Longman, in his chapters on early mountaineering in the Pennines has kept his readers' eyes fixed for the most part on Mont Blanc and Monte Rosa. Considering his limits he has dealt with Mont Blanc with remarkable completeness, and his account can easily be supplemented by reference to M. Durier's excellent book by those who wish for fuller information. I may, however, take this opportunity to give a short account of the only early ascent of an Aiguille, and to say a few words as to the first glacier passes discovered in the

Mont Blanc chain, as well as to add some notes on early ascents in the less frequented portions of the Alps of Canton Valais.

In the Mont Blanc group the chronicler of early mountaineering finds his task comparatively a simple one. For the next eighty years the surprising success of Balmat and De Saussure rather confined than stimulated adventure. There are some legends of early ways across the glaciers to be sifted; but in peak-climbing it was long before the visitors to Chamonix showed any enterprise.

The 'famous Mont Blanc,'* as it soon became, was the one object of ambition to the exclusion of all its neighbours. To have climbed Mont Blanc was until quite recent days a feat in the eyes of the world. Whereas to scramble on to a lower crag, the name of which was unknown save to a few peasants, could not but appear the height of folly to men touched with 'the last infirmity of noble minds,' rather than the true scrambling mania to which self-satisfaction is a sufficient reward. If this was not enough, there remained the fact that Mont Blanc was, at least in appearance, the only one of the neighbouring peaks which was reasonably accessible. It was all very well for a party of tourists at the Montanvert to joke about the Aiguille de Dru, and pretend to start on a race for the summit; † but no serious attack on any Aiguille was made for fifty years after Mont Blanc had been proved accessible.

At last a traveller appeared who was bitten with the passion for the unknown. He fixed his eyes on the 'needle' most conspicuous from the valley of Chamonix.

Most visitors to that village must have seen in shop windows a highly-coloured picture representing a number of people scrambling with the aid of ladders about some icy rocks, and described as 'Première ascension à l'Aiguille du Midi.' At the end of July 1856 the Count Ferdinand de Bouillé, who had ascended Mont Blanc some years previously, and had, in the preceding year, explored the approaches to the Aiguille du Midi, arrived at Chamonix determined to make a serious attack on this peak. The enterprise was generally regarded in the village as hopeless. None of the Aiguilles had, at that time, been climbed: moreover Jacques Balmat, the hero of Mont Blanc, had, according to tradition, failed on this particular one. The preparations accordingly were most elaborate. The head-guide, Gédéon Balmat, was supported by three Devouassouds

* Map to Bourrit's 'Description des Alpes Pennines et Rhétiennes,' 1783.

† 'Alpine Journal,' vol. vi. p. 196.

and a Ducroz. Two porters and a miner, provided with all the tools necessary to fix irons in the rocks to serve as steps, were added to the party. Having passed the séracs of the Glacier du Géant with the help of their ladders, they reached the upper snowfields. No rock was attainable which could shelter them for the night. Accordingly they encamped in a broad and shallow névé crevasse. After drinking much and eating very little, they tried to sleep, but the fire lit on the snow kept melting the hearth, and had constantly to be attended to.

At 3 A.M., on August 5, they set off. In half an hour the Aiguille came into sight. At 5.30 they were at the base of the rocks. The description which follows is, like the familiar drawings which illustrate it, in the most thorough Prealpine style.

The ladders and the miner proved practically useless. The large party (eleven in all) clambered desperately up the perpendicular crags, above bottomless abysses, into which the least false step would have precipitated them, constantly harassed by the stones they threw down on one another. They arrived at last at a point only 80 feet below the highest peak. 'Stop where you are,' cried Ambroise Simond; 'there is the top, only one more couloir and arête: but beware of avalanches.' Simond and Alexandre Devouassoud then went on by themselves. After an absence of an hour, they reappeared 'pale and trembling.' They had reached the summit, and planted a flag on it, which was visible from the valley, but they painted in the strongest colours the perils they had overcome, concluding, 'C'est pour vous comme pour nous, M. le Comte, le drapeau y est, que voulez-vous de plus? Tout l'honneur n'est-il pas pour vous qui nous avez menés là?'

The Count took the view of the case so politely, and no doubt judiciously, suggested to him, and the whole party commenced the descent together. It was of course not without perils and hairbreadth escapes of its own.

The Count concludes, 'I doubt if there will ever be a second ascent. All my guides, and they were the bravest men Chamonix possesses, declared that not one of them would ever consent to expose himself to risks of death so certain as those they had been brought thus near.'*

Prophecies of this sort have been frequently made, but rarely fulfilled. In this case the ascent was repeated by W. Abercromby in 1865,† and in 1869 by Messrs. H. Walker and

* 'Les Fastes du Mont Blanc,' pp. 121-132.

† 'Alpine Journal,' vol. v. p. 44.

Foster,* with Jacob Anderegg and Hans Baumann. The following is their description of the rocks which foiled the Count. 'We had a climb of about 700 feet to the summit. Baumann's verdict was that, though steeper than the Matterhorn, they afforded better climbing; but this will account for our not finding them altogether easy. Their main fault was a tendency to run into large, rather rotten, slabs, taxing Walker's and my length of limb to the utmost, and exciting wonder as to how Baumann's shorter legs managed them at all. The party descended the face of the mountain overlooking the Glacier des Bossons. The whole of the descent was extremely dangerous, owing to the constant fall of snow and stone avalanches, but the inn at the Pierre Pointue was finally reached in safety.'

We have taken the Aiguille du Midi out of chronological order, and in treating of the great pass across the glaciers we have to go back to the days of De Saussure.

It has been generally assumed, I think, that the Col du Géant was known in the country before it was visited by the Genevese explorers of the last century. In support of its antiquity there can be brought forward certain marks on maps which have been supposed to indicate a pass, and a persistent, if vague, report among the people of Chamonix, which was mentioned to Pococke and Wyndham in 1741, and certainly credited by Bourrit, the reopener of the Col. On the other hand, it may be said that a diminution of the glaciers does not necessarily make icefalls easier, indeed very often has exactly the contrary effect, that the rumour of old passages of the Col du Géant hangs together with several legends, some of which are manifestly absurd; while as for the maps, M. Durier has pointed out that the supposed track is nothing more than the frontier line between the Valais and the Duchy of Aosta. It may further be urged that the flanks of Mont Blanc are much more easily turned even than the ice-fields of the central Pennines, and that there was little motive, with the St. Bernard and Col de Ferrex at hand, to adventure on the glaciers. That the rumours as to the upper region were far from being always well-founded is proved by the assertion made to Bourrit, that the Glacier d'Argentière was connected at its head with the Mer de Glace. So formidable is the ridge between them that it was not traversed till 1876.

Still it is to be borne in mind that the chamois hunters of Courmayeur can hardly have failed to scale the mountain

* 'Alpine Journal,' vol. v. pp. 145-154.

slopes above Mont Fréty, and that a path may have been found by them and used on rare occasions by their fellows, by smugglers or refugees. Such use would be amply sufficient to account for the growth of a legend,* and I have no doubt that to this extent the Col was used at some time in the seventeenth century. But the old pass had been entirely lost by Bourrit's time. Professor Forbes has shown this in the following passage:—'The passage of the Col du Géant appears to have been reckoned impracticable as late as 1781. M. Bourrit, writing in that year, and speaking of the aspect of that branch of the Mer de Glace of Chamouni called the Glacier du Tacul, says, with respect to the crevasses:—"Elles sont si effroyables qu'elles font désespérer de retrouver jamais la route qui conduisait à la Val d'Aoste."† De Saussure, in the second volume of his travels, speaking of the Glacier du Tacul, does not say one word of this historical passage of the Alps, though he seems to have thought it just possible that the summit of Mont Blanc might be gained in this direction; ‡ and in the fourth volume, written some years later, when about to give an account of his memorable residence on the Col du Géant, he speaks of "la route nouvellement découverte," § from Chamouni to Courmayeur. This was in 1788.'

M. Bourrit's passage of the Col du Géant was made in 1787, the year previous to that of De Saussure's famous residence on the summit of the 'Grand Col.' The King of Sardinia had heard a story which Bourrit tells us was 'assez répandue' both at Turin and Geneva, that a man had passed from one town to the other 'through the gorges of the Alps' in thirty-eight hours; and he questioned Bourrit on the subject. For a King, Bourrit was naturally ready to confront any dangers, and having come to the conclusion that the only

* See Bourrit's 'Description des Cols,' p. 187, for the arguments in favour of the existence of an old direct pass from Chamonix to Courmayeur. The chapter contains many doubtful statements and false conclusions. The following passage, however, is noteworthy: 'Quand j'ai décrit dans mon premier livre, publié en 1793 (he is writing in 1803), les divers glaciers qui pendent le long de la vallée de Chamounix, je n'en comptai que quatre, celui des Bossons, des Bois, de l'Argentière et du Tour; mais depuis ce temps le théâtre a bien changé de décoration, on en voit deux nouveaux qui sont ceux de Griez et de Tacona; on voit même celui-ci déjà si bas qu'il fait craindre aux habitans qu'il ne s'empare bientôt des possessions qui en sont voisines.' He goes on to relate a story of a passage disused for fifty years, having formerly existed over the Glacier du Tour to the Col de Ferret.

† Bourrit, 'Voyages,' i. 106.

‡ Section 629.

§ Section 2025.

possible short cut lay over the Mer de Glace, he determined to try it. This is his own account. But if the desire to satisfy royal curiosity was the pretence of his expedition, its real cause was doubtless some information obtained at Chamonix, that a pass had lately been found. It must strike every reader as highly improbable that guides, in cloudy weather, such as Bourrit describes, would have pressed on boldly to the crest of the chain had they not been very certain of what sort of descent they would find on the other side. And from other sources * we learn that Marie Couttet, one of Bourrit's guides, had in 1786 actually reached the Col from Courmayeur in company with an Englishman, although no attempt had been made to descend to the Mer de Glace.

Unlike De Saussure, who was compelled to find a way (as the writer was in 1863) along the dangerous rocks of La Noire, Bourrit and his son were led by their guides through the séracs, 'forced to descend into crevasses so deep that they could hardly see the sky. They a hundred times thought themselves at the point of death. But, while four of the party began to despair, Cachat le Géant † restored their courage by his exertions and his boldness, and they succeeded in surmounting all the dangers of their position.' Bad weather overtook them as they approached the pass; they were encompassed first by clouds, then by a drifting snowstorm. One of their porters fell into a concealed crevasse, but fortunately the ladder he carried held him suspended over the gulf. The fatuity of the early explorers in their very partial and careless use of the rope is astonishing. De Saussure as nearly as possible lost one of his porters in the same place by a similar accident.

A happy change in the sky relieved their distress. The wind drove away the storm, they saw close at hand the strait through which they had to pass, and soon had the satisfaction of looking down on the Italian mountains and the town of Courmayeur, lit up by a bright sun. They do not seem to have found any difficulty whatever in the descent, and reached Courmayeur by moonlight, after being out seventeen hours, having started apparently from the Montanvert.

* Ebel's Guide, French Edition, Paris 1823.

† This Cachat was one of the most famous of the early guides. Bourrit's other guides were Charlet-Mercure, Tournier l'Oiseau, and 'le grand Jorasse.' The appearance and character of the last-named guide are described in words which will remind many readers of one of the best men now on the Chamonix roll:—'Le grand Jorasse dont l'âme sentimentale et délicate contrastait avec sa figure gigantesque et la simplicité de ses manières.'

De Saussure's sojourn on the Col du Géant has been well described by Professor Forbes, from whom I again quote:— 'De Saussure and his son arrived at the Col du Géant on the 3rd July, 1788, accompanied by a number of guides and porters, who carried two tents, and the utensils required for a long residence, having slept by the Lake of the Tacul. On the 19th of the same month he descended on the side of Courmayeur, having remained seventeen days at this great elevation. It may be believed, that those guides who remained to share the wretched accommodations of this truly philosophical encampment, were not a little exhausted by the tedium of such prolonged hardships. De Saussure states, that he believes they secreted the provisions appropriated to the day of their descent in order to render impossible a prolongation of their exile from the world. The astonishment of the country people on the side of Piedmont, whence the position of De Saussure's cabin is distinctly visible, it may be believed, was great; and it naturally showed itself in the form of superstition. It is still well remembered at Courmayeur that that month of July having been exceedingly dry, the report arose, that the sorcerers who had established themselves on the mountain had stopped the avenues of rain, and that it was gravely proposed to send a deputation to dislodge them by force,—a task, probably, of some difficulty, for a few men could defend the Col du Géant against an army.

'If we look to what was accomplished by these indefatigable observers, we shall find that it was fully commensurate to the efforts made to attain it. Scarcely a point in the "Physique du Globe" which was not illustrated by their experiments. Geology, meteorology, and magnetism, were among the most conspicuous.'

Professor Forbes tells us in a few words what was commonly known twenty-five years ago of other passages across the chain of Mont Blanc:—'There is said to be a passage which has been effected from the Glacier de Miage, which penetrates very deeply indeed on the south side of the chain of Mont Blanc, to the valley of Contamines, by the glacier also bearing the name of Miage, on the north side; but I have no accurate information of its accomplishment, and the appearance of the head of the glacier on the south side gives little encouragement to the attempt.

'One other passage of the chain has, however, been made, and that is by the Glacier of Le Tour, near the Col de Balme, descending by the Glacier of Saléna into Val Ferret. This was discovered a few years since by a guide of Chamouni,

named Meunier. It cannot be very long, and is probably not very dangerous.*

‘Such are the only known passes of this wild country.’

As to the two passes mentioned by Professor Forbes, a few words must be added. The Col de Miage was first crossed at the end of the last century by a party of peasants, one of whom perished in the ‘bergschrund,’ or ice-moat, at the base of the wall of rock which forms its N. side.† It was also traversed by a hunter named Mollard in 1849. Like many other glacier-passes, it has its traditions. ‘Once upon a time,’ the inhabitants of the nearest village on the Savoy side are said to have been in the habit of walking over the chain to attend mass at Courmayeur, and so regular were they that a part of the church was reserved for their use. This legend is entirely unconfirmed by any good evidence. During the French Revolution, an émigré is stated to have passed the glacier with 10,000 francs in gold about him. The first authentic passage by a traveller was made by W. Coleman (the author of the beautifully illustrated work, ‘Scenes from the Snow-fields’) in 1858. He had reached the top from the Swiss side in the previous year, too late in the day to cross. His successful passage was made from the Italian side.

Professor Forbes, with his constant guide, Auguste Balmat, and Michel Charlet, was himself the first traveller to cross from the Glacier de Tour by the Glacier de Saléna to the Swiss Val Ferret.‡ He descended a steep snow-wall from the Glacier du Tour to that of Trient, and then, turning to the right, passed through the gap since known as the Fenêtre de Saléna. Owing to mists the party found some difficulty in the descent. Mr. Wills’s passage of the same glacier in 1857 is the subject of the first paper in ‘Peaks, Passes, and Glaciers’ (first series).

Mountain exploration in the remoter parts of the Pennine range was pursued at long intervals of time and with little persistence of purpose until General Dufour’s map on the one hand, and on the other, the impulse given to climbing by the formation of the Alpine Club and its publications, led to the systematic investigation of districts and the invention of new ‘high-level routes.’ If the following pages appear desultory and fragmentary it is partly the fault of the subject. I shall

* There was a tradition of an old pass over this glacier, as well as over the Mer de Glace. See Bourrit’s ‘Description des Cols,’ p. 187.

† Coleman, ‘Scenes from the Snow-fields,’ p. 38.

‡ ‘Norway and its Glaciers,’ &c. By J. D. Forbes.

first give some notes on the early ascents of peaks between the Lake of Geneva and the Simplon.

In 1784 M. Clement, curé of Champéry, reached the top of the Dent du Midi.

Behind the dreary lake and hospice of the St. Bernard rises a steep-sided mass of rock seamed with ice and capped with a pure snow-dome—the Mont Velan. It had been attacked before, but the first man to set foot upon its summit was a Prior of the monastery, Murith by name. A description of his ascent is found in Bourrit's 'Description des Alpes Penines et Rhétiennes,' Geneva, 1781.

M. Murith set out on August 31, 1779, with two chamois hunters from the Alp Tzouss, two hours from Bourg St. Pierre, and reached by rocks and grass slopes the Glacier de Proz which surrounds the ridge of the mountain. On seeing the formidable steepness of the peak the hunters lost courage, and one of them separated himself from his companions. The second, Genond by name, remained with the Prior, and they attacked together the face of the Velan. After an hour and a half they hoped they had left behind the greatest difficulties, when a wall of snow, 40 feet high, shook their courage. With the help of their iron-spiked sticks and crampons the obstacle was overcome. Their way was still dangerous but less difficult. After an hour's further progress they drew near the top. But before them a smooth vertical ice-wall presented no hold either for hands or feet. The hunter declared he had enough, and would go no further. Thereupon the spirited Prior produced a hammer and knocked out steps in the wall. With this assistance they both scaled it and found themselves only separated from the snow dome by broken rocks. The climbers were rewarded by a clear view, and M. Murith was able to take observations with a thermometer and barometer on the top.

They looked in vain for another way down, and returned to St. Pierre by the same route in seven hours.

In 182-(?) an Englishman climbed the Velan. In 1826 two monks, MM. d'Allèves and Marquis made an ascent which entitles them to the respect of some of our members, for it is the first recorded as 'without guides.' They left the hospice at 2 A.M., and climbed by the Valsorey valley and glacier to the summit, which was reached about midday. Descending to the ridge that separates Val d'Entremont from the Etroubles valley they returned by 8 P.M. to the hospice. Since this date the mountain has been frequently ascended.*

* Studer 'Über Eis und Schnee,' vol. ii. p. 263.

It was not till 1851 that Herr Studer ascended one of the lofty snow peaks which overlook the Corbassière Glacier. The summit attained was named the Combin de Corbassière to distinguish it from the true, and 2,000 feet higher, Grand Combin, known in the Val de Bagnes as the Grafféneire. In 1856 he was followed by Messrs. W. and C. E. Mathews, who, intending to attack the higher peak, were misled by a local guide.

On July 20, 1857, three hunters from Lourtier, in the Val de Bagnes, reached the upper ridge of the Grand Combin. Whether they attained either of its peaks is somewhat uncertain. On August 19 one of these men led Mr. W. Mathews to the saddle between the two summits. The local guide then led up the N. peak, which proved to be the lowest. Such a mistake could hardly have been made by a man who had previously reached either top. The S. and (by 17 mètres) highest peak, distinguished by Herr Studer as the Aiguille de Croissant, was not attained till July 30, 1859, by M. Deville, with the brothers Balley of St. Pierre.

It is only quite of recent years that the topography of this great glacier-group has been known with any approach to accuracy. Writing in 1859, Herr Studer spoke of the Grand Combin as on the boundary between Valais and Piedmont, whereas, as was proved in 1861 by the discovery of the Col du Sonadon, it lies some distance N. of it. The early explorers made the châteaux of Corbassière their base of operations. It has since been found that the Valsorey valley, near St. Pierre, is the best starting-point for the ascent of the Grand Combin, which has of late years been successfully attacked from several directions. Several other ways over the glaciers in this region were known to hunters or smugglers, such for example as the Col de Collon, a track over the glaciers from Val d'Herens to Val de Bagnes, and the Col du Mont Rouge, first described by Professor Ulrich and crossed in 1856 by Messrs W. and C. E. Mathews.

Mr. Longman has told the story of Monte Rosa and its neighbours, and we now make a wide leap to the Saasgrat.

The Ulrichshorn is called after its conqueror, Professor Ulrich, who with Herr Imseng, Franz Andermatten, J. Madutz, S. Biener, and Mathias zum Taugwald made the first ascent on August 10, 1848, at the same time with a new pass over the Ried Glacier from Saas to St. Niklaus. The party climbed by a steep glen to the Hochbalen Glacier and then over the rocks of the Gemsistock. In six hours from Saas the névé of the Ried Glacier was reached. A steep

snow-slope, 1,000 feet high, but in perfect condition, led to the top of the peak, then known as the *Kleine Mischabel*. They descended partly by the *Ried Glacier*, partly by the rocks on its right bank to the *Schalbetalp*, whence a steep path leads down to *St. Niklaus*.*

In the previous year, 1847, Professor Ulrich had crossed the *Täschjoch* or *Allalein* pass, a glacier route occasionally used by shepherds or hunters from the *Mattmark See* to the *Vispthal*. In 1856 the *Allaleinhorn* fell before Mr. E. L. Ames with *Andermatten* and another guide. From the pass they ascended a long snow-slope which, narrowing as they went, brought them to a saddle near the end of a southern spur of the *Allaleinhorn*. Some stiff rock climbing along the ridge led them to the peak in 2½ hrs. from the pass.†

In 1856 an Englishman, Mr. Chapman, attained one of the minor summits of the *Mischabel* from the *Saas* side.‡

On the west of the *Simplon* pass rise the bold peaks of the *Fletschhörner*, falling on the opposite side into the *Saas* valley. They were among the first to attract Alpine explorers. On August 28, 1854, the *Rossbodenhorn*, the northernmost point of the group, was climbed from *Simplon* by the *Pfarrer*, Herr *Amherdt*, with two of his parishioners.

In 1850 Franz Josef *Andermatten* found a way from the *Zwischbergen* pass over the *Thälihorn* to *Simplon*. The *Weissmies*, the highest peak of the range, is said by Herr *Studer* to have been reached in 1855 by a Swiss, Dr. *Häuser* of *Zürich*, over the *Trifhorn* and glacier. He was followed in 1859 by Messrs. L. *Stephen* and *Hinchliff*. The mountain is now sometimes crossed from *Simplon* to *Saas*.

The third and central peak, the *Laquinhorn* or southern *Fletschhorn*, is one of the few Alpine peaks which has a legend. The story relates that the *Fletschalp* had been promised as a reward of his prowess to the first man who should climb it. A peasant was found to attempt the deed, but when he got high on the mountain, he was terrified at the terrible ruggedness and the vast ice slopes of the upper region. A ghostly voice fell from the top commanding him to bring with him a cat, a dog, and a hen. On the following day he did as he was bid, but the animals one after the other fell over the precipices; whirling snow encompassed him, so that all further advance was impossible, and he only regained the valley after great

* *Studer*, 'Über Eis und Schnee,' vol. ii. p. 57.

† 'Peaks, Passes, and Glaciers,' 1st series, p. 226.

‡ *Ball*, 'Western Alps,' p. 321.

difficulty. Although greeted with jeering and contempt he waited for a favourable day to again set forth with his three animals. This time he got still higher than before, but again the three animals came to a sad end, and a terrible headache prevented the peasant from winning the summit. On a glorious clear morning he was once more seized by an irresistible desire to measure himself again with the mountain even at the cost of his life. He bound an iron band across his forehead (possibly to counteract the effect of the rarity of the air), and since his heart was also of iron, he gained the very top of the hitherto inaccessible peak, and the Fletschalp became his reward.*

On August 29, 1856, a party of nine, Mr. Ames and several friends, Herr Imseng and M. Andermatten reached the top in seven hours from the Triftalp. The ascent was made by a long rocky ridge, which was tedious, but nowhere very difficult to climb.†

Mont Leone is to the Simplon hospice what Mont Velan is to the St. Bernard. Between 1840 and 1850 Professor Forbes with a monk, Herr Alt, had climbed one of its spurs, the Wasenhorn. In 1850 Professor Ulrich, Herr Studer, and Herr Siegfried reached the W. peak from the N. The higher eastern summit was not gained till 1859, when it was visited by some Swiss engineer officers, and a few days later by Herr Weilenmann, an adventurous Swiss mountaineer, known as the author of some spirited volumes of Alpine adventure.

Readers who wish to learn more as to the state of the country between the Rhone and the crest of the Pennines, and how much was known of the mountains before the Alpine Club invented the high-level route, will find information in the works of Simler, Altmann, De Saussure, Frobel, Engelhardt, and Bourrit; or, coming to a later date, in those of Toppffer, Brockedon, Forbes, Latrobe, Studer, and the early editions of Murray's 'Handbook.' A more exhaustive catalogue is to be found in Studer's 'Physische Geographie der Schweiz.'

I do not propose to enter into the early history of the Pennine passes, but the following passage taken from Tschudi's 'Gallia Comata,' published about 1660, is worth quoting as the original authority for the vague statements made in many modern works:—

'Silvius Mons von Teutschen der Gletscher genannt von wegen dass ein ewiger Firn und Gletscher auf seiner First ist

* Studer, 'Über Eis und Schnee,' vol. ii. p. 238.

† 'Peaks, Passes, and Glaciers,' 1st series, p. 206.

bei vier Italischer Meilen breit, der nimmer verschmelzet oder abgeht darüber man zu Sommerszeit ohn Unterlass zu Ross und zu Fuss wandelt ohne Sorgen. Dieser Berg ist fast hoch, scheidet Sedunos oder Wallia, und Salassos, die Augstaller, von einander. Ob dieser Berg-first thielet sich die Strass zu oberst auf aller Höhe in zwei Thäler in das Augsthal hinab zu ziehen, das eine, Valle Tornenza genannt, ist zu rechter Hand, gehet richtig hinab zu dem Städtle Castellum (Châtillon); das andere Thal, Aiaza genannt, zur linken Hand gelegen, gehet nach Eporedia, deutsch Livery (Ivrea). Ueber diesen Berg Gletscher kommt man in Wallias auch in zwei Thäler das eine zur Linken, Vren-Thal (Erin) genannt, gehet richtig nach Sitten, das andere zur Rechten, das Mattthal genannt, darinnen das Wasser Vischbach (Visp-bach) entspringet, gehet hinab gen Visp.'

It is I think clear from this passage that the St. Théodule and Cimes Blanches and, perhaps, the Col d'Hérens were in common use, and that horses were constantly taken over them. Doubtless such an assertion will, as to the latter pass, appear absolutely incredible to most readers. But my Caucasian experience leads me to the conclusion that the present performances of horses in the Alps are very far from representing equine capacity at its highest development. I have actually seen in the East horses cross a pass equal in difficulty to the Col d'Hérens, and there seems no reason, therefore, why they should not, before there were any good roads to make them lazy, have done as much in the Alps.*

THE OETZTHALER FERNER IN 1875. By RUSSELL STARR.

HAVING crossed the Stelvio in very good weather, we spent Sunday at Nauders, where we had an interview with Herr Senn, formerly the parish priest at Vent. He was most polite and obliging, giving us much useful information as to guides, routes, &c., and was quite delighted to find that my companion was acquainted with Mr. Tuckett, who, he said, was his 'lieber Freund.' His only regret was that he could not accompany us in person, having arranged to spend a few days mountaineering with Dr. Petermann, of Frankfort—a regret we fully

* I propose in another paper to condense two accounts of early passages of the Simplon by English travellers. This will be followed by chapters on 'The Alps of the Forest Cantons and Glarus,' and on 'The Alps of Graubünden.' Any curious information as to old books or old ascents which members may have to contribute will be gladly received.

shared, for Herr Senn is not only an agreeable gentleman but an enthusiastic mountaineer, well known to German climbers; and it is chiefly owing to his unwearying efforts that the grand scenery of the Oetzthal has been made more accessible. Foot-paths have been constructed, bridges renovated, and above all a warm welcome insured to all who claim hospitality at Fend. To his kindness and courtesy Mr. Tuckett bears a warm and well-merited tribute in the visitors' book at his old house, a home he regrets during the summer months, though, on the whole, he prefers his present charge; for, as he says, the winter at Fend was terribly tedious with no congenial companions to vary its monotony.

A pleasant 2 hrs. walk through the grand gorge of Finstermüntz, with a glorious view down the Engadine, brought us to Pfunds, in the Innthal. Here, in consequence of a church 'fest,' and the inhabitants being generally on the spree, it was late in the evening before we arranged with two men for the next day, and later still before a convivial party who occupied our destined bedroom left us in peaceful possession. Old 'Johann,' the great man of the place, though, as he said, 'an iron man,' was extremely stupid and rather drunk. Backed by the collective wisdom in the room, he declared Herr Senn's route by the Glockthurm and Krungampen Ferner to the Gepaatsch House an impossibility for one day. Argument was useless; and, as we were not inclined to carry our own sacks and find the way alone, we had to submit and go by the Radurschel Thal and Kaiser Joch, which way, after leaving the pretty valley, is one monotonous grind over rocks and rubbish-heaps, the *débris* of old glaciers, albeit with a fine view of the Glockthurm itself.

We arrived at the house in 11 hrs., two less than the men said, and old Johann looked somewhat crestfallen when Alois Ennemoser, of Lengenfeld—the Wirth of the house, and recommended to us as guide by Herr Senn—told him we could have come by the Glockthurm in very little more time, and had the advantage of a much more interesting route. Ennemoser is a capital fellow and excellent guide. He and a maiden ministered to our wants at a very moderate charge, fixed by the Austrian Alpine Club; 30 to 80 krs. for a bed, and very good fare at an equally reasonable price. The accommodation is by this time increased to some ten or twelve beds, though Ennemoser said last year he should in future make Fend his summer head-quarters, as he found expeditions pay better than hotel-keeping for others.

The convenient situation of the place, on a little fir-clad alp at the head of the Kauner Thal, leading in a few hours to

Prutz and Landeck, and by the way we had come to the Lower Engadine and Stelvio road, together with its advantageous position as a halting-place in the course of expeditions from the main valley, should command for it considerable patronage.

The next day, August 17, a 10½ hrs. delightful walk, including somewhat prolonged halts, brought us to Fend or Vent, in the more westerly branch of the main Oetzthal, called the Fender Thal, which again forks on either side of the noble Thalleit Spitz (11,172), one arm, the Rofen Thal, leading up to the Hoch Joch pass, and the other, the Nieder Thal, to the Nieder Joch, both passes uniting at Unser liebe Frau, in the Schnalser Thal, and terminating at Naturns, in the Vintschgau.

Crossing the lower glacier, a scramble up the moraine and cliffs to the right brought us to the main stream of the majestic Gepaatsch Glacier, where the guides and a hunter whom we overtook became greatly excited by the appearance of a herd of eighteen chamois bounding over the rocks and across the upper névé, but out of the 300 yards' range of our hunter's rifle. The slope of the glacier is very gradual, even over the joch itself, where a noble stream flows for miles on either side between the finest peaks of the western Oetzthaler Alpen, which rise 2,000 to 3,000 feet out of these great snow plains, for which the range is so remarkable. Passing down the Vernagt Ferner to the Rofen Thal without leaving the ice, for this glacier has no ice-fall, we reached the inn at Fend just in time to secure beds, the snow having been in splendid order and the weather perfect.

We were much surprised to find so few English names in the visitors' book at a place which can only require to be better known to be much more frequented by British mountaineers. The level of the valley, more than 6,000 ft., its position in the heart of the fine Oetzthal range, and proximity to the still finer Ortler, should cause it to share some of the patronage so liberally bestowed upon Zermatt, the *Æggischhorn*, and other cherished haunts of climbers in Switzerland; indeed, the valley is not unlike the Zermatt Thal without the Matterhorn. None of the great peaks are visible from below, but a scramble up the steep slopes on either side reveals a glorious group of peaks and passes, tempting a closer acquaintance.

At 4 A.M. on the 18th, aided by a fine moonlight, we left the inn for the Wildspitz, 12,390 ft., the highest of the Oetzthaler Alpen, Ennemoser and his 'knecht' Alois Praatzmeerer acting as guides. The latter is a very promising young fellow, and with a little experience will make a very good guide.

The ascent commences immediately on quitting the inn, up a steep footpath to the first alp, and across gradually sloping pastures, rocks, and moraine to the Rofenkar Kees. On the way we were gladdened by a splendid sunrise over the Hinterer Schwartz Spitz, opposite, promising us the glorious weather experienced.

To the foot of the Spitz itself no difficulty occurs, though the old route along the ridge separating the Rofenkar and Mitterkar Kees was found by Messrs. Tuckett, Freshfield and Fox—I believe the first Englishmen who explored this district—to present considerable difficulties, and to be much longer in point of time than the present one.

The snow was firm and even, though the slope was quite smooth, having been swept by an avalanche a short time previously, which necessitated the only step-cutting of the day, under an occasional discharge of stones coming down an angle of about 50°. Across the chimney some friable rocks require care, and hands have to do their share up some steepish places and round a few sharp corners; indeed, this part of the mountain is a pile of jagged crags, broken into towers and pinnacles, alternating with ledges sprinkled for the most part with fragments splintered away by the weather; and the general appearance is decidedly rickety and tumble-down, though from a distance this peak is the most commanding in the whole range. The rocks passed, a scramble up the steep snow cone brought us to the summit of the loftiest 'spitz' in the Oetzthal Alps, commanding a very fine view of the great range near, and an illimitable sea of mountains away on all sides to the horizon, nothing but snow-fields, peaks, and glaciers; no valleys, no houses, not a green speck anywhere; the spitz itself rising out of the midst of large fields of névé, and overlooking some of the mightiest snow-plains in the entire Alpine chain, viz. the Vernagt, Gepaatsch, and Hintereis Glaciers, crowned by the mass of the Weiss Kugel and its neighbours.

The day was glorious, and we stayed an hour on the summit, though the snow was too soft to venture to the real 'höchste spitz,' along a ridge of snow about a dozen yards to a point some 30 ft., I think, higher than we were. The same cause retarded our progress across the glacier in descending, the heat being excessive, the sun blazing down on us all the way with a vigour I have rarely felt equalled. Time—ascent, 6 hrs.; descent, 4½. This was the second ascent of the season, the first having been made by the curé the day before.

On returning to the inn we found old Benedict Klotz in a great state of indignation because, on account of his age and

slow pace, he had been rejected as unfit to lead up the Wildspitz by a German who made the ascent the following day and returned 'dead beat,' after being 14 hrs. out, finding his fourteen or fifteen stone made a strong impression in soft snow. Klotz was formerly head guide at Fend. His injured dignity took some time to subside, and vented itself in rather strong language and sundry sounding thumps on the table to emphasise his contempt for the younger men who stepped into his shoes and the astounding folly of their employers.

The following day we rested till 4 P.M., when a 3 hrs. walk up the steep east side of the Rofen Thal brought us to the Hoch Joch inn,* our quarters for the night, previous to an assault on the Weiss Kugel. The path was very good, though there are several torrents to wade through, rushing down the mountain side with great force; and the Thalleit Spitz was resplendent with a gorgeous sunset.

Our party was augmented, *pro tem.*, by three English ladies and two gentlemen, who kindly conveyed our baggage on their pack-mules to Meran. The inn was crowded, and the nine guides and mule drivers amused us with their national songs, sung in stentorian tones for an hour before bed-time, Alois leading off, and enjoying himself immensely in common with all the rest, who had as much wine as they liked.

At 1.30 A.M., August 20, we were *en route*. A few minutes brought us into the glacier, which was very clean and slippery. Of the latter fact we had a practical illustration when passing two Germans who had left the inn before us. The younger of the two, in an effort to make progress, fell flat on his stomach, looking like a great black spider in the moonlight. We left him exclaiming against the trials of the way in piteous tones.

After 4 hrs. very cold walking in the bright moonlight, the sun rose gloriously, shedding a flood of rich colouring upon the everlasting snows which surrounded us on all sides, and down the great Hintereis Glacier whence we had come.

Without local guides we should probably have made the same mistake which led the Englishmen already mentioned up the Langtauferer Spitz, for from the glacier the Kugel is not visible, and the Spitz appears the highest peak; one has to go round the corner before the desired goal reveals itself. This party of accomplished and ardent mountaineers were, however, not to be denied, and, descending again to the snow-field, ascended the Kugel, went down the everlasting Matscher Thal,

* Completely destroyed by an avalanche the following spring. According to the last 'Bädeker' it is again open.

and on to Trafoi, a feat which will probably remain unique in the annals of the Oetzthal.

A long pull up the snow-slopes to the right brought us to the foot of our peak, nearly opposite the Innerequell Spitz (10,889). A further and steeper slope, and we were on the first ridge of rocks, which, while requiring care, are firmer, and we thought easier, than those of the Wildspitz, though our present peak is considered the most difficult. In certain conditions, it would be, as the Wildspitz has practically no steep snow-slopes, merely a widish chimney, while the slopes of the Kugel are steep enough to require a considerable amount of step-cutting. A neck of snow a footstep wide, with an almost sheer precipice on one side and very steep slopes on the other, leads in a few minutes to the second rocks, a narrow jagged ridge continuing to within a few paces of the snow-pinnacle forming the actual summit; in fact, they are for the most part sharp enough to stride over.

Our German friends arrived in three-quarters of an hour. The elder of the two, a veteran of fifty-nine years, as he informed us, after a little refreshment, a snort, and a grunt, went to sleep on his stomach till the descent commenced, a performance he repeated at every available opportunity. The younger, with his straw hat secured by a handkerchief tied under his chin, and another handkerchief with a gorgeous yellow border matching his beard round his neck, his suit of black considerably damaged, and looking altogether very much tumbled, sat bewailing the trials and difficulties he had experienced in piping tones, and looking through two enormous pairs of spectacles at the splendid scene around.

The view must be one of the finest in the neighbourhood, if not in the whole of the Alps, the Oetzthal range itself being seen to much greater advantage than from the Wildspitz, which rises N.E., king of the group both in height and grandeur of outline. Beyond to the right and left extend for about twenty miles almost due north the two most important outlying spurs of the central mass, divided by the deep trench of the Pitz Thal, and flanked by the main Oetzthal (E.) and the Kauner Thal (W.).

Turning to the south, one of the most striking features of the range forms an almost unique picture. Valleys cutting deeply into the heart of the southern and western buttresses wind their way down to the broad and fertile Vintschgau, their green slopes and mysterious shadows alternating with snowy peaks and savage rocks, till they are lost in the depths, or lead the eye across to the noble mass of the Ortler and its glisten-

ing snow-fields. West lies the Bernina, asserting itself one of the grandest groups in the Alps; then the eye ranges far away past Piz Linard, across Switzerland to the Pennine range, whence it turns back again to the Dolomites, Stubbayer, Zillerthaler Ferner, and other more distant heights, fading away in an immensity of space, till we acknowledge the whole to form a scene which, among the many glorious and beautiful visions that reward those who seek them among the great mountains, will ever remain ineffaceably fixed in the memory as one of the most glorious and wonderful of all. A little more than half an hour took us down over the rocks to the fine snow-field lying between the Kugel and the Innerequell Spitz, whose highest point forms the Matscher Joch; and some 4 hrs. more over snow and glaciers brought us to a bleak, desolate gorge forming the upper part of the Matscher Thal. Some milk at the first *châlet* and wine at Matsch—a most romantically-situated little village, high on the western slopes—refreshed us down the long but very interesting valley, well wooded and extremely fertile, as we approached the Vintschgau, looking lovely as the rich hues of evening clad the mountains beyond in a hazy beauty.

We arrived at Schluderns at six. It being fast day no meat was to be had, but plenty of fruit, macaroni soup, and omelettes, with which we had to be content. Fast day had not entered into our calculations. Fortunately we had been well provided on the mountain; not so the guides, who were strict Catholics, and had had nothing but bread and cheese all day, on which they had worked well. They, however, announced their intention of getting a 'dispensation' to eat meat the next season.

Our walk had occupied 16½ hrs., including 2 hrs. rests.

We shortly after drove on to Eysr, *en route* for Meran and the Dolomites, greatly pleased with our first, and I hope not our last, visit to the Oetzthal.

ALPINE ART IN THE EXHIBITIONS.

'Juxtaposition is great.'—CLOUGH.

'Man sagt: Studire, Künstler, die Natur! Es ist aber keine Kleinigkeit aus dem Gemeinen das Edle, aus der Unform das Schöne zu entwickeln.'—GOETHE.

We are told from time to time, as an 'obiter dictum' by those who sit in the judgment seat, that there is no such thing as Alpine Art; that the words contradict each other; that such an art is no art. Happily for our peace of mind the judges have condescended to give

reasons for their dictum. We are informed that since the world began no great painter has ever cared to paint mountains; that, therefore, they are proved unfit subjects for painting by the consent of the Masters. This is a position anyone who cares to study the history of art in the best way, by looking into pictures, can examine for himself.

The conclusion any such painstaking student will come to is, I think, a startlingly different one to that of the critics. He will find that every painter who has worked at all seriously in landscape, has made use in his pictures of the mountains that have come within the range of his observation. The old masters, from the men who frescoed the Campo Santo at Pisa, down to Salvator Rosa, painted such mountains as they knew. In Italy during the Renaissance the circumstances of the time kept landscape art in a secondary place, and there were, even among the greatest painters, some who scarcely went to out-of-doors nature at all. But those who did, painted the landscapes of their birthplace or home, and when that landscape was hilly or mountainous they painted hills and mountains. Take the Venetian school as an example. Titian is sometimes called the 'father of landscape art.' Yet the 'Martyrdom of St. Peter,' by Bellini, is almost a pure landscape, a scene of North Italian rustic life, in which it is an immaterial accident that one of the figures happens to be cutting down a monk instead of a tree. Bellini and Cima were always delighted to paint their own hill-country, the lovely region round Conegliano and Belluno, where, in city or fortress-crowned spurs, the blue mountains break down into the luxuriant plain. Titian came from a home deeper in the mountains. Consequently he gives us the scenery of Val di Mel, the jagged ridges of Cadore, or a great Alp with a charcoal-burner's fire rising from its side. 'Landscapes of the half-imaginative memory,' someone says. Certainly for the most part not to be identified as to their precise locality by the exact topographer, but true in every line to the scenery of the Dolomites, not ignoring their most fantastic freaks. I half suspect that the reason some people believe Titian's landscapes to be a refined or idealised version of nature in the Venetian Alps is that knowing little of Venetia they compare them with Swiss scenery, and naturally find many elements wanting. 'Remark Titian's feeling for the beautiful, as shown by the rejection of snow,' says some professor of High Æsthetics. Yes, my good friend, but if you will go and spend your summer holidays at Cadore, as Titian did, you will find there is very little snow to reject. The great painter who so often delighted to show his power in dealing with white surfaces would scarcely have been baffled by a sheet of snow had it come in his way.

This is not the place or time to attempt to trace the representations of mountains in every school. Noting only as we pass Albert Durer's mountains, and that the Dutch school excelled in representations of snow and ice scenes, we turn to modern art. If the fact that a class of subjects has been attempted frequently by a great painter is a proof that they are within the sphere of art (and the argument on the other side surely carries this as its necessary complement), our case—except as to snow scenery—is proved by one witness. There was a natural affinity between Turner's genius and Alpine scenery. Dr. Hooker, a shrewd

observer, carries us farther, when he tells us that among the glories of the Himalaya he was constantly reminded of Turner. There has been no painter before or since with the same understanding of the noblest natural effects, so powerful in depicting illimitable air spaces, vast tracts of champaign or of mountain, in rendering at once the distance, the definiteness and the colour of an Italian horizon. In 'Modern Italy' he painted the hills as they may be seen from Monte Generoso falling to the plain; in his two pictures of the Gorge of Göschenen* he has caught not only the exact structure of the rocks, but the poetic spirit of that stern, and as most painters would think, unpaintable scene. It is idle if not impertinent to praise Turner after Mr. Ruskin. Enough of the Alps happily was known in his day to enable him to accomplish some of the very hardest feats in mountain painting, and to show that there was no scene and no catastrophe too stern or too difficult for him to make pictorial. Had he lived a little later, when Swiss tours began to extend beyond the high roads, and the upper snows were made accessible, he might have founded a school of true Alpine art and saved his successors some misspent labour. We might have been spared much we remember in the exhibitions of twenty years ago; the Swiss cottages, with peasants to match, true to the life—of the opera; the peaks like walking sticks, often bulbous about the top; the Italian lakes in blue and pink, shockingly like and shamelessly vulgar.

The moral then of this short and very imperfect retrospect is that 'juxtaposition is great.' Without it—that is, without close contact between the artist and his subject—no aspect of nature can get properly painted. A genius like Turner may make comparatively little juxtaposition go a long way. But even he would have gained by more opportunities, while lesser men with only the same chances may come to sad misfortune. The work in a new field of painters, even of considerable reputation and technical acquirement, is seldom satisfactory. Look at the curious cross between Devonshire and the Mediterranean Mr. Hook calls Amalfi. To copy nature in the Alps, to be clear yet not crude, forcible without violence, delicate as well as sublime, the painter must learn a new lesson in the depth and arrangement of his colours. Instead of trying to master the difficulty most of our artists are content to secure a general idea of Swiss forms; and in the colouring and the atmosphere of their picture, to neglect local truth altogether and to fall back on their English impressions. The result may satisfy observers as careless as themselves, but to true lovers of the Alps it is utterly distasteful. Our painter of the Alps must combine many qualifications. He must not only be the close friend of the mountains, knowing them in all their moods; he must also have a quick and sure perception, so that, where it is impossible to paint all, he may select and insist on the most essential and characteristic features, and a power of composition equal to dealing with great and often difficult subjects. Above all he must be a master and teacher of the public, leading them to share his appreciation of the true charms of the Alps, not one content to sink into their slave, a painter of made-up landscapes

* Sold two or three years ago at Messrs. Christie and Manson's.

as weak and confused as the nine-months-old recollections of an ordinary tourist.

From these generalities we must proceed to examine in detail some of the specimens of Alpine painting in the exhibitions of 1878. Few who are familiar with the 'Alpine Guide,' in other words few mountaineers, can have passed through the rooms at Burlington House this summer without having a passage in that classical work brought back to their minds. 'The track crosses the torrent to the broad green expanse of Breitenmatt, enclosed by fine pine forests, beyond which the Wetterhorn and Wellhorn with a part of the Rosenlauri Glacier complete a picture, to render which on paper or canvas is the constant but vain aspiration of Alpine artists. In fine weather it is common to see several of the fraternity, each with his outspread umbrella, engaged in the same hopeless but exciting enterprise.'

We first meet Rosenlauri in Room 2, and Mr. Leader is the show-man. Alas for the lover of mountain form! The painter has taken the final peak and pulled it out sideways, as one may take one of the india-rubber faces which amuse children, thus reducing the slopes to an angle of about 20°, and destroying altogether the beauty of the sky-piercing pyramid. But much as we may prefer nature's Wetterhorn to Mr. Leader's, we must not insist on literal fidelity in details if the picture is true as a whole to the spirit of the Bernese Alps. We must not forget that simple topographic work, however meritorious, is far from being the highest form of art. Composition—the power of treating a landscape so as to combine its features in the most harmonious manner, in the common phrase 'to make a picture of it,' is the work and mark of the artist. We shall be the last to complain of any liberties he may take with local detail, so long as he performs his part within just limits, so long as he follows in nature's lines and does not essentially misrepresent her truth by mixing up incongruous elements, England and Switzerland, in an impossible combination. But what do we find in Mr. Leader's 'Rosenlauri'? A pale English sky overhanging mud-grey mountains, green-grey pines, and a feebly indicated torrent. The only thing in the picture which gives the eye a moment's pleasure is a beautiful mossy boulder lit by a gleam of sunshine.

On the line in the great room Mr. Vicat Cole gives us his version of Rosenlauri. Form and colour are again all wrong. Where does this great pasty glacier, these unsubstantial buttresses, come from? Not any Rosenlauri we have ever seen. The whole picture might make a creditable drop scene, but is beneath criticism as a serious representation of the Alps. A little further on we come to yet another Rosenlauri, Sir Robert Collier's; 'the only one of the three I can recognise,' said in our hearing a passing visitor, and there was much force in the remark. This is honest topographical work, thorough as far as it goes; somewhat wanting, however, in composition and aerial effect, scarcely satisfying our memories, but at any rate not insulting them by any distortions of local truth. More powerful in handling, though less interesting in subject, is John Collier's 'Stream near Rosenlauri.' This is a very fine study of Swiss wood and water. The torrent is all dashed into foam, and there are few spaces—too few—where the water

is opaque enough to show patches of grey-blue colour. The forest, the cliffs behind it and the mists which float along their face are all out-of-door realities, not phantoms of the studio. With his father's example, and no legal impediment in his career, Mr. Collier should succeed, if he can embody in his work close observation of the poetry as well as of the prose of Alpine nature.

We must not pass unnoticed Bierstadt's large 'Rocky Mountain' landscape. Yet we cannot honestly admire, though there may be something to respect. When photography succeeds in copying colour as well as form this is the sort of result we may look for.

No. 142, by A. Godwin, is a very pleasant, bright picture. The scene is laid among the Tyrolese Alps in early summer, before the flower-carpet has been swept off by the mower. Broad uplands spread away in breezy swells, clouded with the deep blue of gentian bells and the warm tints of ripe grasses. In the distance the sunlit snows and brown crags of a lofty range are half hidden by the vapours which cling softly round its base. The scene chosen is a charming one, and has been lovingly painted.

Passing on to the water-colour room the first picture to attract attention is Mr. Croft's 'Breithorn from the Riffel.' Mr. Croft deserves the greatest credit for this most careful and, to a certain point, successful attempt to represent the most difficult, perhaps, of all Alpine subjects, a snow and ice scene under a midday sun. Nothing could be better than the drawing of the face of the Breithorn with its rocks and snows. It is a disappointment to us not to be able to feel more satisfied with the picture as a whole. Where does it fail? We fancy, so far as a critic ignorant of technical procedure in water-colours may judge, that Mr. Croft has made a mistake in his scheme of colour. Anxious to give as far as possible its true value to the brilliancy of the snows, and at the same time to preserve the balance of his picture, he has made all his colours too bright. The sky is a brilliant grey, the glacier a bright green; even the face of the Breithorn is all pale green and white; there is no shadow anywhere, no repose for the eye. Surely there is more contrast and depth of colour even among the snow mountains. The total result is an uncomfortable sense of want of atmosphere. We feel almost as if we were looking at a landscape among the mountains of the moon. It may seem ungrateful to dwell on any defect in a work of such honest, skilful, and original study. But Mr. Croft is evidently painstaking as well as ambitious, and as an Alpine clubman, he will not expect the highest success to reward every adventure into the snow world. Our criticism is made in the expectation of seeing him overcome the difficulties which still harass him, and it would be false kindness not to point out in what direction—if we see rightly—they lie.

Mr. Smith (739) has represented that well-known trio, the Mönch, Eiger and Jungfrau, as they are seen at sunset from the north. The foreground is filled by an Alpine pool, the water of which is grey and ghostly; the lower hills and hollows lie in blue shadow; a faint rosy light still clings to the side of the three great peaks. Some one has said, Why is it not on their summits? But such an effect is often produced

when a cloud in the west throws a local shade. To our thinking there is a little too much of the mountain on the left in the picture, and the sky is lower in tone than it would be at such a moment. But the mountain drawing is precise and excellent, and the sketch as a whole is a thoughtful and delicate piece of Alpine work.

We turn with pleasure from the crowded halls of the Academy to the collection of pictures and studies by M. Loppé, which has lately decorated our own club-rooms. That M. Loppé has several of the qualifications for a successful painter of the Alps no one can deny. He loves the great mountains, and has made himself familiar with them by long and intimate intercourse. His work is therefore the fruit of years of study. He has a considerable power, a power which the present exhibition, we think, shows to be still on the increase, of bringing down with him on canvas what he has seen in the upper world. If he must not yet be ranked among the rare magicians who portray immeasurable space without the least sacrifice of definition or detail, he can suggest with surprising success the broad landscapes of the High Alps. If his brush may miss some of the finer shades, some of the more delicate gradations in the skies and snows (as every painter must until a Turner climbs Mont Blanc), if his rock modelling is sometimes inclined to flatness, yet he never fails to seize the prevailing tone which gives its character to the scene and moment chosen for representation.

He is never false, seldom careless or superficial. His skies, various as they are, are all Swiss skies, not English. His mountains are living Alps. His snow and ice are the real things. On all his work there is the stamp of truthfulness—each of his sketches represents a fact. Compared to most Alpine oil-painting they are as the keen touches of a Kingsley compared to the laborious home-made descriptions of a commonplace writer. Without pretending to estimate the extent of M. Loppé's talent as an artist, we feel sure he has made true and honest use of it, shirking no difficulty, and leaving art precedents and conventions, even his own fame, to take care of themselves so long as he could put his power to the best use in reproducing the scenery of the High Alps.

Last time M. Loppé came to see us he had turned his attention chiefly to the glacier—its séracs and crevasses. This year he has lifted up his eyes to the peaks and the skies. In size and probably also in the labour bestowed on it the most important piece of work is 'the Matterhorn from below the Col de la Valpelline.' In the foreground is the blue névé crevasse familiar to this painter's admirers. In the middle distance the Matterhorn stands up supported by the peaks behind Zermatt. We have here the least familiar view of the peak, the back of the rearing horse. An afternoon shower is passing over the mountain and casts a shadow across its crags, half veiling the more distant range which is seen through it. The effect has been most judiciously chosen, and is rendered with quiet truthfulness. In 'A Storm at the Märjelen See,' a thundercloud is sweeping down the Aletsch Glacier, whose surface shows purple in the shadow, while the icebergs gleam vividly out of the dark waters; a powerful picture which we much prefer to the

larger but somewhat tame representation of the same scene in sunshine.

In 'Mont Blanc from the Buet' we look across from the shrunken snows of the Buet to the dome of Mont Blanc wrapt in the rosy glow of sunset, every curve in its outline leading upwards to the final cupola which soars high beyond all supporters. Blue shadows fall from the Aiguille du Gouté across the illumined face of the snows; the sky, very carefully studied, is tender green changing into rose. A most poetical impression is here produced by simple downright study and avoidance of exaggeration. Three other pictures show Mont Blanc in his most familiar aspect from Chamonix, in broad sunshine (compare the modelling and effect of these snows with those in the Academy pictures), at sunset, and under a cloud. In a small picture (No. 31) the spectator is standing on Mont Blanc. The foreground is filled by a cloud 'lightly curled' at his very feet, through it a glimpse is caught of the valley of Chamonix, while other vapours are mingling with the blue hills below, above which stretches the mysterious deep-toned sky of high altitudes. With this might be compared a study of mists coming up on the Col du Géant, in which the motion and transparency of the clouds has been finely caught. 'Mont Blanc from the Col du Géant' was not one of the subjects M. Loppé had done full justice to in the picture first exhibited. The details of granite structure in the recently conquered Péteret and the vertical lines on the rocks of Mont Blanc are better treated in a smaller work added subsequently to the exhibition. We have not space to linger over each of the numerous pictures shown. There are many charming little sketches, Matterhorns by sunrise and sunset, Mont Blancs, Aiguilles 'red and white and green,' which will light up English walls with memories of Swiss summers. There are sundry small studies of sea-coast or Thames-side skies which show what M. Loppé can do off the mountains.

The studies finished on the spot displayed in the back room were perhaps the most interesting part of the exhibition. M. Loppé has put to good use the new hut on the Col du Géant: since De Saussure no one has turned a visit to that high place to such good account. We find a series of sketches taken from the pass. Now we look over the depths of Val d'Aosta to the Grivola and Grand Paradis; now towards Monte Rosa. In some we see the golden lights of a stormy sunrise, in others the still splendours of evening, when blues and purples fill the valleys and the horizon swims in rosy vapour. There are a whole series of studies of the Alps in winter: the Wetterhorn and Wellhorn, the real mountains this time, stand out clear against a sky mottled with frosty vapour; the Lake of Luzern ripples at the feet of brown misty mountains, doubtless more manageable to the painter than the heavy green of August foliage. The Lakes of Geneva and Annecy, seen behind leafless thickets, reflect the soft low lights of a winter sun half veiled in grey mist. In one corner were two glorious bits of glacier ice, perfect studies both as to form and texture; and between them a masterly painting of a little Alpine stream, flowing on clear and blue through the snow which mantles all the world beside.

The materials are a vein of blue water and a sheet of snow, but the reflections and shadows are given with a force and purity which make us value this as highly as anything in the collection as a proof of M. Loppé's sincere study of Nature and his power of overcoming technical obstacles in her interpretation.

P.S. Mr. Ruskin in the last edition of the 'Notes' to the noble collection of Turner's drawings, he has most generously lent the public, disputes the opinion expressed above, that the upper snows are within the sphere of art. We quote the passage :

'It is curious (and what our modern school of gymnastic tourists will think of it I know not), that among the Alps he shunned the upper snows, as at Venice the bright palace walls, and drew only the great, troubled, and surging sea of the pastoral rocky mountains. But he felt always that every power of art was vain among the upper snows. He might as well have set himself to paint opals or rubies. The Alps are meant to be seen as the stars and lightnings are, not painted. All proper subjects for a painter are easily paintable; if only you can paint! Carpaccio and Sir Joshua can paint a lovely lady's cheek with no expense on strange colours; but none can paint the snows of the Rosa at dawn.'

To argue with Mr. Ruskin on any question of art, most of all on any question about Turner, would be an act of some temerity. But we may fairly, and without undue presumption, confront him with an equal champion in the author of 'Modern Painters.' Turning to that work we find the same subject treated with a very different result. Space fails us to quote the eloquent and most true descriptions of the beauty of colour as well as of form in a snow drift, of the modelling of the upper snows and its relation to the underlying mountain form, or the admirable advice given to the painter who attempts to delineate the phenomena of the upper world of rock and ice and snow. We can only refer generally to the final paragraph, and ask Mr. Ruskin whether he no longer 'hopes that Alpine scenery will not continue to be neglected as it has been;' whether he is no longer prepared to feel 'very grateful' to the capable painter 'who will refresh us a little among the snow;' whether he no longer desires 'the pure and holy hills treated as a link between heaven and earth? '* May not lovers of the High Alps with this chapter in their minds, venture to doubt whether the reason Mr. Ruskin now assigns for Turner's neglect of the upper snows is the true one, whether a better and simple reason does not lie at hand?

Mr. Ruskin himself describes the old-fashioned journey into Italy 'as Turner knew it,' a delightful journey indeed, but not a journey bringing the traveller into any close neighbourhood with the eternal snow world and its noblest summits. Turner never gained any intimate acquaintance with the snows by climbing among them. If this is so, could he have painted them? An emphatic answer rings in our ears. 'No man ever painted, or ever will paint, well, anything but

* 'Modern Painters,' vol. i. p. 284, and preceding pages.

what he has early and long seen, early and long felt, and early and long loved ;' and it is Mr. Ruskin who speaks. The difference, we should say, between Turner and some painters of our own day is, that he was too wise to attempt to paint at all what he knew he was not sufficiently familiar with to paint well.

Is it not more likely that this is the true reason of Turner's abstinence, than that the painter of the 'Avalanche' failed to paint snow-peaks from any feeling of the technical difficulties of the task? That such work must be full of difficulties is of course admitted by everyone, but that the difficulties are insuperable, we have the high authority of the author of 'Modern Painters' to deny, and we will not impute to Turner that he gave way where he might have conquered.

One word more. The drawing lately given to Mr. Ruskin by his friends, being probably a landscape in the Rhine valley below Coire and near Ragatz, ought not to be called 'the Splügen Pass' It is miles away from any pass, and might as well be called the San Bernardino or the Lukmanier or the Julier, lying equally on the road to any of these old highways. We think this fact of some importance for Turner's sake, for seen looking up through the hot vaporous air of the Rheinthal, snows and rocks contrast very differently to what they do when seen on a pass or in the highlands of Savoy; and Mr. Ruskin's criticism on the snowy range, and also possibly that on the absence of trees, might be modified by careful calling to mind of the exact neighbourhood represented in this lovely drawing.

ALPINE NOTES.

COTOPAXI.—The following further details of Freiherr M. von Thielmann's ascent of Cotopaxi are taken from the 'Verhandlungen der Gesellschaft für Erdkunde zu Berlin,' No. 3. 1878.

'On January 12, 1878, Herr von Thielmann left Quito, accompanied by five "peones," veterans in mountain ascents. The first night was spent at Machachi; the second at Limpiopongu (3,888 mètres) on the saddle between Cotopaxi and Ruminahui. This was the spot from which (on September 9, 1877) Dr. Wolf had made his ascent, and Herr von Thielmann proposed to follow the same route.

'On January 14, the tent was left behind, and the ascent begun by the very convenient *arenal* (slope covered with pumice stone), on the south-west side of the lava stream from Yanasacha. A walk of three hours brought the travellers to the last camping-place of Dr. Wolf (4,652 mètres). The night was spent there so that next morning the last and steepest portion of the cone might be climbed with unimpaired energy. The weather was bad, rain and hail alternated, but towards sunset it became clear and still. This point might easily be reached on horseback. Herr von Thielmann, however, had wisely preferred to test himself and his companions by a preliminary walk, a measure of foresight which had the result of inducing an Englishman who had so far accompanied him, to abandon the ascent.

'The night of January 14-15 was cold, but quite still. Cotopaxi smoked slightly, and rumbled from time to time. On Tuesday, the 15th, the "peones" were awake at 2 A.M., and a meal of hot meat and tea taken. At 3.50 A.M. a start was made. Herr von Thielmann says, "Had I known the route was so easy and free from danger I might have set out at half-past two." A tiresome climb among boulders led up to the crest of the Yanasacha lava. Thence, under starlight, the direct way to the summit was followed. The fatiguing ascent over the lava can easily be avoided by taking an easy route along the north-west slope of Millihuaico, as Herr von Thielmann had opportunity to observe on the descent. At daybreak (about 5.30 A.M.), at a height of about 5,000 mètres, the foot of the smooth snow-slope was reached. Up to this point the snow had been mixed up with a covering of ashes. Between 4,700 and 5,000 mètres the eye saw more black than white, and it was impossible to determine the exact snow-level.

[Here Herr Reiss, another South American traveller, remarks, 'probably the bivouac at 4,652 mètres was on snow or ice. Wherever, at this and even lesser heights, I had excavations made in the *arenal* of the Yanasacha volcano, I came at a depth of two or three feet upon deep-blue hard ice. The glacier was buried in ashes.']

'The morning broke cloudless, fleecy vapours filled the valleys, but all the mountains from Cayambe to Carihuaizazo were beautifully clear. From 5.20 to 8.40 A.M. was spent in a monotonous climb up a steep snow-slope lying at an angle of about 40 degrees. The surface was so hard that steps had to be cut for the sandal-shod "peones." The work was fatiguing for the arms, but refreshing to the legs and lungs, since the rate of progress was necessarily slow. Turns were taken every five minutes in step-cutting. At seven o'clock the first "peon" complained of headache, and about eight, the other two became somewhat tired. Herr von Thielmann was fully equipped for an Alpine expedition, with nailed shoes, ice axe, neutral-tinted spectacles for himself and his companions, a mask, and a rope which was not brought into use. To accomplish on the ice-field 750 mètres (5,000 to 5,750 m.) took the party 3 hrs. 10 min. Herr von Thielmann attributes this slow rate of progress entirely to the wretched foot covering of the "peones," which gave them no sure hold on the snow. It will be noticed that the last 250 mètres were ascended at about the same pace in 1 hr. 5 min.

'At 8.40 A.M. the Cuchilla (*arête*) was reached, which separates the upper basin of the Chuchunga Huaico (ravine) from another ravine sinking to the N. or N.N.W. Dr. Wolf is in error in estimating this Cuchilla at 5,200 and odd mètres. Herr von Thielmann is confident that it is at most only 250 mètres below the summit, or in round figures about 5,750 mètres. The Cuchilla had since Dr. Wolf's visit acquired a fresh covering of snow, was six feet broad, and not in the least dangerous, although the ground fell away very steeply on both sides. The fresh snow had so completely covered the clefts in the lava observed by Dr. Wolf, that above 5,000 mètres nothing but a smooth unfurrowed snow-mantle was visible. The Cuchilla is some 100 mètres long. It was followed by a moderately inclined snow-field (about 20 degrees),

which was traversed between 8.40 and 9.10 A.M. The N.E. wind became stronger, but not sufficiently so to cause serious annoyance. At 9.10 A.M. the travellers were at the base of the ash cone, that is to say, of the ash-covered crags of the summit. Dr. Wolf found here bare rock; Herr von Thielmann only bosses of rock protruding from the ashes. This is explicable, as the prevailing wind brings all the ashes of the eruptions to this side. This slope of ashes, beginning 120 mètres under the peak, was climbed in the same way as the top of Vesuvius. At 9.45 A.M. the N.W. summit, the highest point of the peak, was reached in 6 hrs. 15 min. from the sleeping place.

‘Herr von Thielmann considers 6,015 mètres (19,700 feet) the correct height. The weather had broken, and the steam of the crater cut off the view towards the S. The temperature of the air was 4 deg. C.; the wind faint, and the sun pleasantly warm. The crater was only visible by moments, so that it was impossible to get a satisfactory general impression of the whole, though every part was seen at intervals. The gases which steamed forth from the crater, and the “fumarole,” appeared to be differently composed to those observed a few months previously by Dr. Wolf. The “fumarole” on the slopes threw out by fits and starts steam with slight traces of sulphureous matter, and even on the edges of the crater, only once and for a moment, was the smell of sulphureous exhalations observable, although Herr von Thielmann remained an hour on the summit, and the wind often drove the thick clouds of steam over him. Eruptions with outbursts of ashes and “rapilli” still frequently occur, with which the snow on the west side was covered; signs of them were noticed during the halt at the last sleeping-place at 4,625 mètres. On the day of the ascent itself no outbreak of ashes was noticed.

‘The top was left at 10.45 A.M., and at 2.15 P.M. the whole party arrived safely at Limpiopongu, where some time was spent in packing up the coverings and implements. The descent of what had taken 9 hrs. to climb thus occupied only 3½ hrs.

‘In this (the fourth) ascent of Cotopaxi only one of the “peones” complained of headache, all the others were perfectly well. None of the climbers showed any signs of exhaustion, and the appetite of all was brilliant. On the top a meal, consisting of preserved meat, rolls, red wine, and cold tea was taken. Brandy was not used by any of the party. On the other hand, Herr von Thielmann allowed his companions to chew tobacco-leaves, an expedient he believes useful in high ascents, as the action of chewing keeps the salivary glands in action. Herr von Thielmann himself suffered in no way from fatigue, nor was his stomach in any way upset, only in the evening at Limpiopongu he suffered from a slight headache.

‘Herr von Thielmann used two aneroids, of Goldschmidt of Zürich. Both worked well up to 3,000 mètres, above this they failed, owing, Herr von Thielmann believes, to the imperfect elasticity of the metal case.

‘On January 16, Herr von Thielmann set out on his return to Guayaquil, crossed the pass at the foot of Chimborazo on the 19th, and on January 24th returned to Guayaquil.’

THE PALE* DI SAN MARTINO.—The following note records the fall of this summit, the last of the ‘untrodden peaks’ of Primiero. Further details would be welcome.

‘San Martino di Castrozza,’ June 24, 1878.

‘I have the honour to inform you that my friend the Count Alfred Pallavicini and myself made yesterday the first ascension of the Pale di San Martino. Our excellent guides were Santo Siorpaaes and Arcangelo Dimaj of Cortina, and the porter Michele Bettega of S. Martino.

‘JULIUS MEURER,

‘Vice-Präsident des Oester. Touristen Club,
Mitglied der Section Austria des D. u. O. Alpen-Vereins.’

ATTEMPT ON THE DENT DU GÉANT.—In the ‘Bollettino’ (No. 33), Signor G. de Filippi gives a long account of an attempt made by Lord Wentworth and himself to get to the top of the Dent du Géant by means of rockets. On the north of the Dent, only 80 mètres below the summit, is a platform of rock, and on the opposite flank, at a somewhat lower level, a corresponding one. The object was to pass a rope over the summit from platform to platform by means of rockets. A mechanism had been prepared for this purpose by Signor Bertinetti, of Turin. At the third attempt success seemed about to crown the plan, the party on the north side saw the rocket-stick fall at their feet, but a gust of wind carried back the rope, and all subsequent attempts were equally unsuccessful. The Dent du Géant still remains unconquered. Whether or not it is allowable to use such weapons against a peak, proved inaccessible by all ordinary means, is a nice question of mountaineering morals on which we do not feel called to express any opinion.

FATAL ACCIDENT ON MONT BLANC.—The following account is taken from a letter of Signor F. Gonella, published in the ‘Bollettino’ of the Italian Alpine Club (No. 33):—

‘On August 19, 1877, Signor Gonella left Courmayeur, with Julien Grange as guide, and two porters, for the Miage hut. It was intended that one of the two porters should accompany Signor Gonella to the summit of Mont Blanc, while the other returned from the hut. Bad weather on the morning of the 20th compelled the party to abandon the ascent. About 11 a.m. they all set out to return to Courmayeur, one of the porters being unattached; the other three roped. At a point where some séracs have to be passed it is necessary, it appears, to traverse a couloir. While in this position a noise was heard overhead, and looking back a great mass of ice was seen falling on the climbers. Grange, with great presence, shouted, “*Jetez vous dans la crevasse,*” and he and the traveller succeeded in sheltering themselves in a crevasse happily close at hand. The roped porter was less completely covered, and being struck and swept down, pulled Signor Gonella out of the crevasse. Grange, however, held them both up until they had time to recover their footing. The second porter, who was unroped and some paces in the rear, was caught by the bulk of the avalanche and swept down the couloir. When Grange reached him he found him lifeless.

* See p. 55 as to the correct spelling of this word.

'Signor Gonella remarks, that in his opinion no blame attaches to Grange for the partial use made of the rope. The accident happened at a spot which was traversed unroped by all the guides and porters engaged in the construction of the cabin, and which he had himself passed unroped in ascending the previous day. He does not tell us whether it is possible to take any other route to the cabin, by which the risk of similar accidents may be avoided in future. This is a point on which further information is very desirable.'

THE DENT D'HÉRENS.—On Saturday, August 11, 1877, the Rev. F. T. Wethered, with Hans Knubel and another guide, left the Stockje hut at 3.20 A.M., and reached the summit of the Dent d'Hérens by crossing the Tiefenmatten Joch and attacking the peak from the snow-fields on the south-west. Declining altogether to return over the Joch late in the day, the party made for the Col de Valpelline, and, missing the direct route—none of the party having crossed the col before—mounted the huge ice-fall of the Za de Zan Glacier, and so reached the pass, eventually arriving at Zermatt, *vid* the Stockje and Zmutt Glacier, between 10 and 11 P.M. 'I make a note of this, simply to show that the Dent d'Hérens may be ascended from the Stockje, and the return journey (to Zermatt) effected in one day, without recrossing the Tiefenmatten Joch. The ice-fall of the Za de Zan Glacier was one of the most exciting pieces of work I have ever experienced. Had we not missed the usual route to the Col de Valpelline, the expedition would have been much simplified as to difficulty and would, of course, have taken considerably less time.'

INSURANCE FOR GUIDES.—The subscriptions to the Knubel Fund, with the additions made to them abroad, have reached a very considerable sum. It is not likely that on any similar occasion such a fund could be raised a second time, and it would be matter of regret if the liberality of the Alpine public should create exaggerated expectations, or encourage Swiss guides to neglect to make any provision for their families during their years of prosperity. A good deal of nonsense is from time to time written about the dangers of the profession of guide. It is exposed to infinitely fewer dangers to life than most industrial pursuits, or, we may add, sedentary professions. It is far less dangerous than the pursuit of a chamois-hunter, commonly followed by Alpine peasants. But it is a calling liable to certain risks, and which cannot be followed in advanced life. The Swiss, French, and German Alpine Clubs would do a good deed if they would severally promote among the guides in their respective territories a habit of effecting insurances against death or accident, and if they would persuade respectable insurance offices to offer them suitable advantages. The difficulty with a peasant often is to make him put away money for the benefit of others after his death. Assistance in case of accidents, and a small annuity after a certain age, ought to serve as strong inducements to the ordinary Alpine peasant to make provision for his own future as well as his family's.

LEGAL RIGHTS TO GLACIERS.—Mr. Marett writes: When I sent to the 'Alpine Journal' some observations on the legal rights to Glaciers (published in vol. viii. p. 277), I was not aware that in 1875 a discus-

sion on the subject had appeared in a Zurich legal publication. The author, Herr Kappeler, states, that in Valais, Vaud, and Berne, glaciers have been treated as state property; that in Grisons (as I understand him) glaciers are held to belong to the commune or parish, but land left by glaciers to the adjoining landowners, and that in Uri glaciers would be held to belong to the commune. He, however, contends, that glaciers are not fit subjects for property, either in individuals or in the state, and must be like the sea, the seashore, and flowing water, according to Roman law, 'res communes omnium juri naturali,' the property of no one or of every one; and he doubts if anyone can even by occupation acquire any rights over a glacier. He thinks, however, that the state ought to have power to regulate the working of the ice, and for that purpose to grant concessions, &c. If this is not the law, he thinks it ought to be, and suggests a short enactment to that effect in a future Swiss Civil Code. As to the soil beneath the glaciers, he seems to hold that it belongs to the owners of the adjacent land.

The subject appears to have excited much interest, and the Editor of the 'Mittheilungen' oddly calls it a 'burning question.' In the 'Jahrbuch des Oesterreichischen Touristen Club,' 1877, p. 178, Herr Schiestl argues, that in Austria glaciers belong to no one, and may be appropriated by anyone for the purpose of working the ice. He promises a discussion on the right to the soil under the glaciers.

I have taken these statements from the 'Mittheilungen des Deutschen und Oesterreichischen Alpenvereins,' 1878, p. 82, where the subject is discussed at length; the Editor appearing reluctant to accept the conclusions of Herren Kappeler and Schiestl. As the Editor of the 'Mittheilungen' has honoured with a notice my previous observations, I will add, that for any mistakes or deficiencies in the preceding abstract, brevity, and my imperfect knowledge of German, must be the excuse, as I can have no opinion of my own on a question of foreign law. Of course to an English lawyer, the theory of land or anything affixed to it not belonging to anyone is inadmissible.

THE BEGINNINGS OF THE ALPINE CLUB.—In the unhappily posthumous account of 'The Formation of the Alpine Club,' by our late President, Mr. Longman, in the 'Alpine Journal' for February, reference is made at p. 84 to a letter of mine to Mr. E. S. Kennedy, dated December 1, 1857, in which I mentioned that Mr. William Mathews had written to me about such a club nearly a year before. This reported communication from Mr. Mathews was evidently the earliest germ of the Alpine Club known to Mr. Longman. As no further particulars have appeared in the May number of the Journal, and Mr. Mathews, as I learn from himself, has now forgotten what took place, I offer no apology for placing on record the text of his original suggestions, as it shows how definitely he had planned the club in his own mind from the first.

The first reference is at the end of a long letter of February 1, 1857, describing expeditions in the Combin range. 'In the meantime I want you to consider whether it would not be possible to establish an *Alpine Club* (*sic*) the members of which might dine together once a year, say in London, and give each other what information they could. Each member at the close of any alpine tour, whether in Switzerland

or elsewhere, should be required to furnish to the President a short account of all the undescribed excursions he had made, with a view to the publication of an annual or biennial volume. We should thus get a good deal of useful information in a form available to the members. Alpine tourists now want to know the particulars of the following "courses" which I believe have been recently made: Finsteraarhorn, Jungfrau from Grindelwald, Altels, Galenstock, Dom, Weisshorn, Zinal Pass, Crête à Collon, and many others.' On February 16 Mr. Mathews wrote again: 'Pray let me know what you think of my proposal for an Alpine Club;' and a third letter, dated June 19, full of Alpine queries, ended with the same subject. 'Apropos of the Alpine Club, I should suggest sending circulars next October or November to all the best known mountaineers, and getting them to dine together in London, at as cheap a rate as you like; we could then discuss whether anything further could be done, and see how the thing would be likely to answer.'

These extracts show how far the matter had gone before Mr. Mathews went abroad in the summer of 1857, and how glad he must have been to find in Mr. Kennedy so helpful a coadjutor, when they met in the Haslithal in August, under the circumstances noticed by Mr. Longman. What passed on that occasion was no doubt detailed to me when Mr. Mathews was staying with me in Hertfordshire on October 26 and 27, and we were talking over the subject of our previous correspondence; but unfortunately I can recall no particulars of the conversations. The dinner at the Leasowes took place ten days later, as appears from Mr. Longman's account, and from that date the Alpine Club was practically founded.

F. J. A. HORT.

6 St. Peter's Terrace, Cambridge, May 31, 1878.

ALPINE MEETING AT PARIS.—The French Club proposes to hold a congress of mountaineers at Paris on the 6th, 7th, and 9th September. The first two days will be devoted to discussions and conferences on subjects interesting to Alpine travellers. On the third day, an excursion will be made to the forest of Fontainebleau.

Members of foreign clubs, including our own, proposing to attend, are requested to send their names to the Secrétaire-Général du Club Alpin Français, 31 Rue Bonaparte, as soon as possible. The President of the English Club proposes to attend, and will be glad if other members will join him.

REVIEW.

STUDI GEOLOGICI SUL GRUPPO DEL GRAN PARADISO.*

Ten years ago there appeared in the 'Bolletino del Club Alpino Italiano' a paper entitled 'Studi sul Gruppo del Gran Paradiso,' by Signor Martino Baretta. At that period perhaps no part of the Alps, certainly

* *Studi Geologici sul Gruppo del Gran Paradiso*. Per Martino Baretta. (Reale Accademia dei Lincei, Roma, 1877.)

none of so much interest and importance, was so little generally known. The map of the Sardinian Etat Major was disfigured by gross errors, and notwithstanding its large scale, was almost absolutely destitute of accurate detail in the higher regions. Some of the principal peaks and passes had been described by members of the English Alpine Club in its earlier publications; but other parts of the district were, if not totally unexplored, at least undescribed. Of the topography of this group, Signor Baretto gave in his paper a concise, but full and accurate description. The sketch map which accompanied it showed how completely he had traversed the ground in every direction, and indicated with approximate correctness the position of all the principal summits and the form and extent of the glaciers which surround them. Signor Baretto's studies, however, were not confined to the surface and external appearance of the mountains. His main object was the investigation of the geological structure of the group, and the result of his labours is given in the work now before us. Within the period which has elapsed since his first expedition to the mountains of Aosta in 1862, a revolution has taken place in the views entertained by leading geologists relative to the origin of an important class of rocks. While the gneiss and slates, of which a large part of these and most other mountains consists, have long been acknowledged to have been originally sedimentary, though considerably altered in condition since their first deposit, it was once generally believed that the granites, syenites, and porphyries were of igneous origin, having been erupted from great depths, and having probably by the contiguity of their heated masses produced the changes which had manifestly taken place in the other rocks. Further investigation led many eminent geologists, and among others Signor Gastaldi, of whom Signor Baretto professes himself a disciple and follower, to the conclusion that not only these, so-called metamorphic, but the supposed eruptive rocks themselves, had originally been aqueous deposits, and that the idea of their igneous origin was an erroneous one, resulting merely from their more complete transformation and crystallisation.

Our space will not permit us to enter at any length upon the discussion of this question. We would only venture to remark, that by a natural reaction from the views formerly entertained, Signor Baretto, and geologists of the same school, seem to have been led somewhat to an opposite extreme, namely, to the conclusion that all the changes of condition, which are observed to have taken place in the structure of the crystalline rocks, are due simply to lapse of time and intermolecular action. The agency of heat is ignored; the source of heat, which was formerly supposed to have been afforded by the eruption of molten matter from the interior of the earth, being rejected. But when we recognise the enormous mechanical forces which must have operated in the elevation and distortion which we observe, we must admit at least the possibility of a source of heat within the rocks themselves, which may have contributed a most important element in the changes which have occurred.

The group of the Grand Paradis forms one of several distinct areas of elevation in the Alps. Divided by the line of comparative depres-

sion, through which runs the valley of the Dora Baltea from those of Monte Rosa and Mont Blanc; by that upon which is situated the Val de Rhemis and the Col d'Iseran from that of the western Graians; and by a less marked division from that of the Cottian Alps to the south-west, it occupies a space of a rudely elliptical form, the major axis of which lies in a direction of north-east to south-west. The loftiest summits, culminating in the Grand Paradis itself, 13,271 feet, are upon a line nearly parallel to the main axis, but situated a little to the north-west of it. The axis is intersected by the valley of the Orco, by which some of the very oldest formations are exposed in the granites of the Scalare di Ceresole. Further south the axis is prolonged through the peaks of the Levanna, beyond which the elevation becomes less considerable. Along this line the rocks, classed by Signor Baretti as the earlier crystalline, extend a distance of about twenty-five miles, and the same are found for about six miles upon either side of it; but the larger portion of these consists of gneiss, only occasionally exhibiting a granitiorial or porphyroid character. These deposits dip in all directions from the centre, and are surrounded and covered by the more recent formations of the later crystallines, called also by Signor Baretti the zone of greenstones, consisting principally of serpentines, magnesian limestones and greenstones, gneiss and mica schist, but including also massive granites and syenites, formerly supposed to have been of eruptive origin. In respect to geological epoch, he refers both groups to the Laurentian era, the earliest known examples of which were observed in Canada, though the contemporaries of the upper and later beds have since been recognised in Norway, in Scotland, and in the Isle of Anglesea.

Signor Baretti's interesting monograph contains also a full account of the various useful minerals found within the district, as well as of the later—tertiary and quaternary—deposits, including the enormous moraines left by former glacial action at the opening of the great valleys, and discusses fully the traces of the glacial periods. This part of the subject is illustrated by a map showing the state of the district in the glacial period, when covered by an enormous sea of ice from which only the higher peaks emerged. Other maps and numerous sections exhibit the geological structure of the group.

An ideal section, showing the formation of terraces by glacial excavation, illustrates very correctly the mode of operation of the glaciers. The surface of the rocks in the lower part of the valley is rubbed and polished, but the valley is not materially deepened. It is at and above the level of the surface of the glacier that its principal effects are seen in the removal of considerable masses of rock, and in the formation of terraces, and it is obvious that the same operation continued for sufficient length of time would have for its result, not the excavation of valleys, but their gradual obliteration by the removal of the mountains which divide them.

R. C. N.

NOTICES.

VICTOR EMMANUEL AT COGNE.*—Many members of our Club must have met the late King of Italy on his way up or down Val d'Aosta, or in his hunting-camps. These will recognise the fidelity of the spirited and by no means flattered portrait of the royal sportsman which forms the frontispiece of this little volume. L'Abbé Gorret has put together an account of his king's holydays in the mountains, which is marked by evident truthfulness, and a pleasant absence of any trace of courtier-like servility. Victor Emmanuel in the mountains was a bluff, good-hearted sportsman, anxious to do any good in his power to all who came in his way, free from any royal reserve, and, like most real men, allowing his dignity to take care of itself. If any peasant had grounds of complaint against one of the king's providers, he had only to find an opportunity of catching the king's own ear to obtain prompt redress; and no one seems to have been shy of addressing the 'galantuomo,' who encouraged his subjects to imitate his own frankness. From 1850 till his death, the Graian Alps were Victor Emmanuel's favourite resort. Even our own sovereign is not more ready to fly to Balmoral than was the King of Italy to escape from Rome to his rude hunting-lodges in the Graians. These valleys were not for a quarter of a century the favourite playground of royalty, without gaining substantial advantages. Money was spent in making many miles of hunting paths, and occupation was given to a considerable portion of the population as beaters and keepers. A map showing the royal hunting paths accompanies the volume.

PROFESSOR HUXLEY'S PHYSIOGRAPHY.†—This most instructive and admirable text-book is sure to pass through many editions, and it is worth while, therefore, to point out some slight slips falling within the special province of the 'Alpine Journal.'

On p. 191 it is stated, that 'masses of rock, some weighing as much as twenty tons, are said to have been cast forth from Mount Ararat during the eruption of 1840, and in other cases, stones have been hurled to a distance of more than thirty miles from a volcano.' Ararat has never in historic times been an active volcano. The catastrophe of 1840 was a 'bergfall' on a large scale, produced by an earthquake.

On p. 161 the Po is mentioned among large rivers that 'may be traced back to muddy streams springing from glaciers.' This is true if we look to the tributaries as well as the parent stream, but the source of the Po under Monte Viso, the source which has been accepted since classical days, is remarkable among Alpine rivers as bursting forth in a large clear stream from the rock, and has no visible connection with any glacier.

The following definition seems obscure and faulty. 'A line drawn at the level above which the snow never melts is called the snow-line.'

* *Victor-Emmanuel sur les Alpes. Notices et Souvenirs.* Par Amé Gorret. Turin: F. Casanova, 1878, 2 francs.

† *Physiography: an Introduction to the Study of Nature.* By T. H. Huxley, F.R.S. London: Macmillan & Co., 1877.

On the north side of the Himalaya mountains this line is 16,600 feet high [these figures are wrong], that is to say, all the snow which falls below this height is melted in summer, *but all above remains unmelted.* [The italics are ours.] If the author ever is tempted by Professor Tyndall on to the western slopes of the Aletschhorn on a warm afternoon, he will obtain conclusive proof that a great deal of melting goes on above the snow-line; and in Professor Tyndall's books he will find a definition of the snow-line which is at any rate preferable to that quoted above.

We must further enter a protest, both on artistic and scientific grounds, against the mind of youth being bewildered by such a misrepresentation of a glacier as that opposite p. 157. All the phenomena of an ice-stream are here most grossly distorted. The pupil, if he takes his idea of glaciers from this cut, will be led to believe that they are long, highly arched masses of ice, resembling in appearance an indefinitely prolonged Midland Station; that crevasses are pits arranged to resemble starfish, and quite disconnected with the inclination of the bed of the glacier; and that moraines are heaps of stones placed exactly like those by the side of a road, in separate heaps, some of which cling on to nearly vertical slopes of ice. The foreground will probably suggest a suspicion that the hill sides above Zermatt are built-up of petrified hams and cheeses.

THE TRENTINO 'ANNUARIO.'*—A short time ago the Trentino Alpine Club was dissolved by a decree of the Government, which seemed to foreigners needlessly severe. We are glad to find that it has risen again from the flames of official wrath. The funny little bird with a star on its head and trefoils in its wings, which appears on the cover of the new *Annuario*, is certainly not an Austrian eagle, and may, therefore, be supposed to be a Phoenix, and to fitly symbolise the new '*Società degli Alpinisti Tridentini.*'

We rejoice to see that the society proposes to set about the preparation of a complete map of the Trentino, a district where the new Austrian survey is far from satisfactory either in nomenclature or hypsometry.

The following important correction sets at rest a matter which has long puzzled foreign travellers, who have not dared to go against the authority of maps:—

Pale [*e.g.* Cimon della Pala, Pale di S. Martino, Palon della Mare], receive their name from their shape resembling that of a spade (*pala*), not from *palla*, a ball, a derivation which deprives the name of all its force and appropriateness.

PROCEEDINGS OF THE ALPINE CLUB.

A general meeting of the Club took place on *May 7th*. Mr. D. W. FRESHFIELD, *Vice-President*, in the Chair.

Mr. GEORGE BARNARD read a paper on 'Sketching from Nature in the Alps in Water Colours,' and exhibited drawings to illustrate the paper. He also presented a copy of his work on 'Sketching in Water Colours' to the Club library.

Mons. G. LOPPE made some remarks on the difficulties inherent in

* *Annuario della Società degli Alpinisti Tridentini*, 1877. Milano, 1878.

his work the Alpine artist encountered, and on the further difficulties he had found abroad from the want of appreciative and intelligent criticism. This could only be supplied by true lovers of the Upper Alps, such as the members of the Alpine Club, who, by climbing among the snows, had grown familiar with their beauties. He thanked the Club for the facilities and encouragement it had offered him.

The Chairman expressed the Club's thanks to Mr. Barnard, and reminded the meeting that Mr. G. Barnard had constantly, and with no small success, laboured faithfully to represent high mountains when our water-colour exhibitions were full of the strangest landscapes, called in the catalogue Swiss scenes, but not otherwise recognisable as such. He added some remarks on the probable future of Alpine art.

A general meeting of the Club took place on *June 4th*. Mr. C. E. MATHEWS, *President, in the Chair*.

A letter was read from M. Albert Neundler, President of the Swiss Alpine Club, inviting members to the Club Fête at Interlaken on September 1st, 2nd, and 3rd.

The following resolution, proposed by the President and seconded by the Hon. Secretary, was carried unanimously: 'That the committee be empowered, on obtaining an extension of the existing lease, to make such arrangements and spend such funds as they may deem desirable in the improvement and refurnishing of the present rooms.'

The Secretary exhibited a specimen of machine-made rope, which, however, in his opinion, with which several members agreed, was not in any way superior to the ordinary hand-spun rope, the yarn being necessarily of inferior quality.

The Secretary then read a paper on 'Alpine Climbing, Past, Present, and Future.' Some discussion followed, chiefly on the possibility of ascending the highest mountain peaks.

Mr. HINCHLIFF did not believe the highest mountains would ever be climbed. Dr. LIVEING was of opinion that the action of the heart would interfere with success in climbing at great altitudes.

The Secretary and Mr. MATHEWS maintained that with proper training and acclimatisation much could be done, that it was difficult to fix the limit to which mountaineers might ascend, and that their present 'highest' must not be considered final. Messrs. POLLOCK and HARTLEY also spoke.

The summer dinner took place at the Ship Hotel, Greenwich, on *June 21st*, when fifty-eight members and their friends sat down. Mr. C. E. Mathews, *President, in the Chair*.

A meeting of members of the Alpine Club was held on *April 27th*, at the White Lion Hotel, Ambleside, when nineteen members and friends sat down to dinner. Mr. Horace Walker *in the Chair*. Excursions were made in various directions over the hills on both the following days. Though so short a time was devoted to this most lovely and interesting country, enough was seen by those members of the Alpine Club who visited it for the first time to show them that the English Lake district, apart from its intrinsic beauty, provides opportunities for climbers which the most enthusiastic scrambler need not despise. It was determined to hold a meeting of a similar character next year at some place in North Wales, to be fixed upon at a future date.



Stanford's Geogr. Establ. London.

Note. Mr Gardiner's route is in red. The 'Blinnen Joch' is Mr S Taylor's *F* altered to distinguish it from the Holsandjoch leading to the Bir converted into the Blindental in some modern Swiss books a

THE
ALPINE JOURNAL.

NOVEMBER 1878.

EXCURSIONS IN THE LEPONTINE ALPS.
By F. GARDINER.

THERE are but few parts of the great European play-ground which the English mountaineer has not visited, and he who would now tread upon new ground must seek far and near, and sift through no inconsiderable quantity of Alpine literature before he attains his desired object. It was not, therefore, without some difficulty that we eventually ascertained that, with the exception of Mr. Sedley Taylor's ascent of the Blinnenhorn from the Blinnen Glacier, and the ascent of the Basodine by Mr. Freshfield, the snowy peaks round the Gries Glacier and Tosa Falls had scarcely been touched by English mountaineers. The result of our discovery was, that in the programme drawn out by my friend Mr. C. Pilkington and myself for our Alpine campaign a week was devoted to the partial examination of this group.

Our guides were Peter Kaufmann of Grindelwald, and Peter Knubel of St. Niklaus, and the first expedition which we had in hand was to endeavour to make a new pass from the Blinnenthal to the Tosa Falls, between the Blinnenhorn and the Merzenbachschein by the Gries Glacier. Reckingen, in the Rhone Valley, is the nearest village to the Blinnenthal, but it contains no inn; so we obtained provisions, blankets, &c., at the Hôtel des Alpes at Viesch, a comfortable little hostelry recently opened by my old friend Herr Fuller, formerly M. Seiler's chief aide-de-camp at the Hôtel Mont Rose, Zermatt. Arrived at Reckingen, we applied to the priest (who seemed to be the only able-bodied male in the village who was not employed in haymaking) for a porter to carry our wood and blankets to the upper chalets in the Blinnenthal. His recommendation caused us to engage one Franz Guntern, a chasseur, who, in 1866, acted as Mr. Sedley Taylor's local

guide when he ascended the Blinnenhorn, an expedition which has been but once repeated, and that by the curé himself, a feat of which he was not a little proud. The path leading to the upper chalets lies on the right bank of the stream, and rises pleasantly through a picturesque valley well wooded up to a considerable height, and closed at its head by the Blinnen Glacier, which descends in a graceful ice-fall from the Strahlgrat between the Hohsandhorn and the Mittaghorn. The group of human burrows—for they are not worthy of the name of chalets—at the head of the Blinnenthal, we found dirty, damp, and altogether wretched, and when we started next morning (June 29) at 2.50, Pilkington was handicapped with a severe cold, while I was quivering like an aspen leaf with a sharp attack of ague. Still in spite of these discomforts the weather was so perfect that we could not resist its influence, and we went on our way rejoicing. Crossing the valley and the stream issuing from the Blinnen Glacier on a snow bridge formed by the remnants of a gigantic avalanche, we mounted by a narrow and steep valley between the Merzenbachschein and Blinnenhorn, keeping to the left bank of the stream flowing from a small glacier between those peaks. The way was steep and the stones loose and shaley, but we encountered no difficulty, and reached the glacier at 5.15 A.M. and the col at 6 A.M. It commands a noble view of the Oberland group, somewhat limited to the north by the Merzenbachschein.

When, an hour later, we stood upon the summit of the Blinnenhorn, the view in every direction was simply perfect. It would be from a point of view like the Blinnenhorn that I should wish to answer those sceptics who ask, 'What went ye out to see?' Never had I seen the giants of the Oberland look so imposing; the Finsteraarhorn asserted its preeminence over its neighbours, while the Viescherhörner, Oberaarhorn, Aletschhorn, Nesthorn, and Bietschhorn formed the advanced guard of a host of other peaks. In fact, nearly every summit of the group was visible. Below us lay the Rhone Valley with its numerous villages, churches, and cornfields, succeeded by the varied green of forest and alp, which led the eye back again to the majestic glaciers and summits; a panorama sublime and beautiful, never to be forgotten. The temperature, luckily, was so mild that we were able to remain on the summit for over an hour. We returned to the pass (for which we suggest the name of Griesgletscherjoch) at 8.30 A.M., breakfasted there, packed up our traps, and started for the Tosa Falls at 9 A.M. We descended by the right-hand side of the Gries Glacier, which is quite easy, though possibly some of the crevasses

under the Blinnenhorn might give trouble later in the season. Passing under the Rothhorn and rounding the Bettelmattenhorn, we descended by a small glacier to the chalets of Bettelmatten in the Griesthal, where we joined the path of the Gries pass. The upper part of the Griesthal is composed of two plateaux, with a steep drop between the chalets of Bettelmatten and Mora, and it descends gently from the latter village to within a short distance of Auf der Fruth, where the valley again becomes almost level and receives the stream flowing from the Valle Toggia, which, with the water from the Hohsand and Gries Glaciers, breaks over a precipice towards the chalets of Unter Fruth, forming the grandest waterfall in the Alps. As a rule I have found visits to waterfalls merely productive of disappointment; there are so many causes which militate against them, such as the height of surrounding mountains, scarcity of water. But the Tosa Falls are really splendid, and we viewed them under specially favourable circumstances, the volume of the fall being considerably augmented by the rapid melting of the spring snows in the upper Alps. Viewed from a clump of trees half-way down the path to Unter Fruth, the fall presents its most favourable aspect.

The inn we found partly occupied by a large party of Italians, who were dancing together wildly to the obnoxious squalling of a flageolet and a huge trombone, the latter being about as inconvenient a mountaineering companion as can well be imagined. Luckily these noisy visitors left shortly after our arrival; later in the day, two Italian mountaineers, completely arrayed in mountaineering gear and apparently prepared for every emergency, reached the inn on muleback. Bran new alpenstocks of most unseasoned-looking wood, white umbrellas, and veils formed prominent features in their outfits. Pilkington and I were certainly an awful warning to all those who disregarded precautions against the burning effects of the sun on the snow.

But few English visitors, judging by the entries in the book, visit this inn, and, with the exception of the 'ubiquitous Tuckett' and Freshfield, none of those names 'familiar in the ear as household words' are to be found registered therein. The royal word 'muggy' best expresses the nature of the weather when we left the Tosa Falls Inn at 3.10 A.M. on Sunday, July 1. Following a faintly-marked track, we reached the chalets of Gigelen under the Monte Castello, and whence we witnessed a brilliantly red sunrise, which did not raise our hope of good weather and a clear view to any unreasonably expectant pitch. From Gigelen to the summit of the Baso-

dine we trudged uncomfortably through soft snow, and shortly after leaving the chalets the clouds descended upon us, and we made our way by chart and compass. The guides' want of faith in the latter was something quite disheartening, and they remained unconvinced, although it led us well, and we hit the ridge between the Kastelhorn and Basodine at the right place. Here the clouds parted for a short time, and we could see the Hohsand and Gries Glaciers; but towards the Oberland everything was shrouded in black clouds. A storm was evidently raging, for we could hear the distant roll of thunder and see an occasional flash of lightning. We reached the summit at 7.40 A.M., and beneath us to the north-east lay the Caveragno Glacier, by which this peak is usually ascended.* Somewhat more to the east lay the glacier of Val Antabbia, by which we hoped to effect our descent to the Val Bavona. We had only just taken our bearings when the storm which we had seen raging in the Oberland approached with rapid strides, and broke over our devoted heads. An old proverb says, 'He who would catch fish must not mind getting wet;' so, having caught our fish, we took the wetting with equanimity. The rocks leading to the Antabbia Glacier are steep, but we did not find them difficult, and the remains of a large avalanche assisted us on to the glacier, over which, to use an Americanism, 'we made tracks' rapidly, for it was snowing, and the wind was howling horribly. We were somewhat frozen, and looked like figures on a Twelfth Night cake. Lower down the snow was changed for heavy drenching rain, and we could see but a short distance ahead. Just before the first inhabited chalets we came suddenly upon a group of little goatherds picturesquely clad in long blue cloaks. They received us with anything but placidity, not having seen climbers in that part before, and they made off with yells, evidently of opinion that our advent was more likely to be of an infernal than celestial nature. Appearances, I must admit, were against us. A donation of small coin and the remains of our provisions, however, mitigated the effect of our first apparition, and the boys preceded us to the chalets, from which a steep path, in some places literally a stone staircase, leads to the village of San Carlo, at the junction of the Val d'Antabbia with the Val Bavona.

Although in Italian territory, the inhabitants of Val Formazza, from which we had started in the morning, are a German-speaking population of an unmistakably northern type, while the inhabitants of the Val Bavona, although po-

* See Mr. A. W. Moore's note, p. 112.

litically Swiss, are thoroughly Italian in all essentials. The solid and comparatively well-built appearance of the chalets in the upper Italian Alps has often struck me, as compared with the miserable shanties that the ordinary Swiss cowherd is content to use. The chalets of Val d'Antabbia fully bear out this comparison. The descent seemed never ending, and when I mention that the Basodine is 10,748 feet high, and the village of San Carlo but 3,150 feet above the sea level, that may be understood. San Carlo was reached at 10.45 A.M. To say that we were wet through, but faintly describes the condition we were in when we stood upon the bridge leading to that village; the water was pouring from our hats and sodden garments. Shortly afterwards the storm passed away, and, although the clouds hung heavily round the mountains all day, the sun shone out at intervals, lighting up one of the most lovely valleys in the Alps, combining almost every variety of Alpine vegetation with noble precipitous rocks and cliffs interspersed with picturesque chapels, shrines, and villages. The upper part of the valley is crowded with huge boulders, some of which are so large that the earth on their top has been planted with barley or oats. Until we reached Caveragno we scarcely met a human being except some ancient beldames, 'picturesquely hideous,' who were left in charge of the valley habitations, most of the able-bodied population being in the upper Alps. Passing through the vine-trellised street of Caveragno, we arrived at Bignasco at 1.10 P.M., exactly ten hours from the time we had left the inn at Tosa Falls. The praises of Bignasco have been already sung by the author of 'Italian Alps,' but it would be almost impossible to exaggerate the loveliness of the place; everything combines in its favour, from its luxuriant foliage, its situation at the junction of the valleys, with a distant view of the snow-capped Basodine to the high-arched bridges, and the grotesque and gaudy frescoes which decorate shrine and chapel.

We were hospitably received by the proprietor of the great rambling inn, by whom our tale was received with incredulity, on the ground that we had done our work too quickly, the route by the Caveragno Glacier probably occupying more time than our descent by the Glacier and Val d'Antabbia. Our host, somewhat to our astonishment, produced some remarkably good Bordeaux, which we scarcely expected to get in so remote a spot. Good fishing is to be had in the neighbourhood; an Englishman we met there produced some very fine trout and grayling he had caught that day. Two graceful bridges cross the streams flowing from the Val Bavona

and Val Lavizzara, adding in no small degree to the picturesque-ness of the place, and were the rudiments of cleanliness better understood by the proprietor of the 'Posta,' a lover of the mountains, whether his department be botanic, athletic, or artistic, would scarcely regret a visit to Bignasco; but I was given to understand that the landlord is a man of substance and a local magnate of considerable importance, so probably his great mind disdains such details.

On the following morning we crossed the bridge over the Bavona, and, following the high road to Cevio, mounted at the back of that village by a steep mule-path, which leads to the village of Linescio, picturesquely placed high above the river Rovana, amidst vines, chestnut trees, and corn-fields. At Collognasca the valley bifurcates into the Val di Bosco and Val di Campo; our destination being Andermatten, in the Val Formazza, our way lay through the former valley. Mounting a steep path, we reached the considerable village of Cerentino, and on the other side of the valley, separated by a deep ravine, surrounded by trees, stood the picturesque villages of Corino and Camanoglio. Above Cerentino the valley assumes a much more orthodox Alpine character, the chestnut tree and the vine giving place to the pine and the Alpenrose. At Cerentino Italian only is spoken; but at some chalets about half way between that place and Bosco, the *sennerrinn* came out and addressed us in a queer mixture of German and Italian. She offered us milk, for which she refused absolutely to take any remuneration whatever, an experience to me almost unique, certainly in the Italian Alps. The village of Bosco is situated at the head of the valley, the inhabitants are not nearly so Italian in type as those of the lower part of the valley, and they speak a patois of German, which even our guides could only understand with difficulty. Bosco is built upon a small hillock crowned by a substantial church. We had been given to understand at Bignasco that entertainment was to be had at the priest's house; but found on our arrival that there was no resident clerical, and we should have fared but meagrely had not Knubel unearthed a grubby-looking native, who entertained us with milk and rather mouldy bread for a moderate consideration; travellers are not an everyday occurrence in this valley, and prices are still primitive. Clouds, which threatened heavy rain, and mist seething restlessly round the cauldron-shaped cirque at the head of the valley, commended the advisability of engaging local talent to point the way to the top of the pass. It was well we did so, for before reaching the Grosse Alp we were swallowed up in mist, the rain poured down in torrents, and we were not sorry when

we reached the wooden cross marking the summit. In order to reach Andermatten we had taken the Criner Pass which rounds the Sternenhorn, and near the Ober See joins the route leading to the Hintere Furke Pass. The Criner Furke Pass, though more circuitous, is used by the natives in preference to the Hintere Furke, owing to the greater height of the latter. From the Criner Pass there is a fine view up the Val Formazza closed by the Falls of the Tosa. While descending towards the chalets of Staffel we met a large party of Bosco peasants of both sexes returning home; the ladies of the party, with laudable economy but scant modesty, had divested themselves of shoes and stockings and had tucked their clothes well above their knees. They were equally struck with our appearance, especially observing, with anything but respectful astonishment, a red woollen cap I wore. We parted none the worse friends for a little criticism on either side, and they went on their way, and we could see their bare legs and red umbrellas bobbing up and down for the next half-hour, while we answered their farewell *jodels* with the best efforts of our townbred lungs, until a turn in the path took them out of our sight. Between the Ober See and Staffel Alp the mountain side was crimson with Alpenrosen. Descending swiftly to the Staffelwald we reached Andermatten at 4 P.M., just before the clouds came down again, and it set in for an uncompromisingly wet night. The inn at Andermatten no longer exists, that is to say as an inn. The former proprietor is dead, and we had some difficulty in persuading the ancient dame whom we found in possession 'to take us in and do for us.' We were not sorry to return to our old quarters at Tosa Falls the following day after the makeshift reception we had had to put up with at Andermatten. Towards evening the clouds cleared away, and the wind springing up from the north was a sign in our favour for our next and last expedition in this district.

Brilliantly fine was the weather when we started from Tosa Falls at 2.35 A.M. on July 4. Crossing the small plains opposite the inn we climbed over the lower north-east buttress of the Nuefelgiuhorn, and in about one hour and a half reached the desolate Nuefelgiu Pass between the peak of that name and the Bannhorn. Leaving the pass and turning to the right, by the aid of a convenient couloir we reached the glacier between the Ofenhorn and Bannhorn, where a sharp ridge of rocks between these peaks completely divides it from the Hohsaud Glacier. This ridge is completely ignored by the Federal Map, and caused us no small bewilderment; but having once crossed it by a gap close to the Bannhorn we saw the Hohsaud Glacier spread out before us, and the Hohsandhorn

at no very great distance in front. In order to reach the latter we kept as high above the crevasses and seracs of the Hohsand Glacier as possible. We propose the name of Ofenloch for our new pass. From the pass itself we had a fine view of the Basodine, but it was not until we reached the Hohsandhorn that the great peaks of the Oberland came in sight. The view is so precisely similar to that from the Blinnenhorn that I shall not again attempt a description, and will merely say that that peak has the double advantage over the Hohsandhorn of being higher and somewhat nearer to that Alpine paradise.

In order to reach the Mittaghorn we went along the narrow arête of the Strahlgrat, which we found the most difficult part of the day's work. It occupied more than two hours. The Mittaghorn was reached shortly before eleven, and, after building a cairn, we descended the small but extremely steep Rappen Glacier, and at midday found ourselves at the head of the Rappenthal, than which a more uninteresting and monotonous valley I have rarely seen. We found it tenanted by a single chamois, who scarcely took the trouble to get out of our way until chivied by fiendish yells, and even then turned round to view the phenomenon of bipeds upon the Rappen Glacier. For three-fourths of its length the bottom of the valley was filled with avalanche snow; but under the Eggerhorn it turns sharply to the north, and the beautiful slopes of the Walliser Viescherhörner and the villages of the Rhone valley come in view. A pleasantly shaded path through a forest took us to Aernen, the village opposite Viesch. A further descent in order to reach a small bridge over the Rhone, a scramble up to the dusty high road, and we were once more at Herr Fuller's comfortable Hôtel des Alpes, well satisfied with our work round Tosa Falls.

This district, with the exception of the Gries Pass, has been, so far as I can ascertain, almost unknown to English travellers, and the two passes we succeeded in effecting are quite new, and make pleasant routes for reaching these southern valleys from the valley of the Rhone, and afford throughout a series of magnificent views. The existence of a comfortable little inn at the Tosa Falls in the centre of this group, the varied flora, picturesque villages, churches, and inhabitants of these valleys should certainly be sufficient to attract a portion of the host of sub-Alpine travellers who so freely flow in the accustomed groove of travel, and little suspect, as they move drearily along the Rhone Valley and Furka Pass smothered in dust or bespattered with mud, what scenes of unexplored beauty they leave on either side.

ALPINE CLIMBING—PAST, PRESENT, AND FUTURE. By
C. T. DENT. Read before the Alpine Club, June, 1878.

NOT very long ago, there appeared in a well-known weekly periodical* an article on the subject of the future of Alpine climbing, and therefore also of the Alpine Club. Another article, which doubtless most of those present have read, appeared almost at the same time in a popular magazine,† on the ‘Dangers of Mountaineering.’ We have, in this Club, been accustomed to attacks of this nature from time to time: attacks which have by no means impaired our vitality, but rather, like attacks of distemper, have increased our value. It would be easy enough to refute them from our point of view, or to pass them over as the vapourings of envious mortals not initiated into the mysterious pleasures of our craft. But I would not do so. Articles like these may lead or reflect public opinion, and our position with the public is not a matter to be treated lightly. Our Club, founded as it was in 1857, has increased in numbers and importance in an exceptional manner. That the numbers still increase might be taken as proof enough of its vitality as a club. But this alone will not refute the argument that the work of the Alpine Club is fast approaching its end. It were well worth while, I think, to enquire dispassionately into the truth of such an assertion.

I may seem, in what follows, to be wandering again over ground already well trodden, to be but recapitulating what has been said, and far better than I can say it, a thousand times before. But let it be noticed that I lay no claim to originality in what I write. The conditions are different from what they were. It seemed to me desirable to sound the feeling of the Club on the points hereinafter raised, the more especially that I fear a classification into Past and Present is only too true. Look back for a moment to the commencement of our Club. Think over its rise since that time. Few could have even dreamed of the wide popularity mountaineering was destined to acquire, or the influence that the establishment of the Club was to have on it. The original members, like the fish in the aquarium, can hardly have known what they were in for. But into the past history of our Club it is not for me to enter. Familiar and interesting it doubtless has long been to all of us; but now doubly so, since it has been sketched for us by the loving hand of William Longman. It is the subject of Alpine climbing that I wish to consider now.

* ‘Saturday Review.’

† ‘Temple Bar.’

Twenty years ago there were numberless heights untrodden, passes uncrossed, regions unexplored. Then, moreover, there were comparatively but few to cross the passes or climb the mountains. But those few did mighty deeds. Peak after peak fell before them, while slowly but surely they opened up new regions and brought unexpected beauties to light. Climbing, as an art, was even then in its infancy. Gradually it became more developed, and with the increase of power thus acquired came increase of confidence. But from the fact that the training in the mountaineering art was gradual, it was necessarily thorough. It is this that many of us would do well to bear in mind in these latter days. Then, of course, the charm of novelty, so dear to us, was seldom absent. But, in quest of novelty, search had to be made even then in remote regions. As a result exploration was not limited, and the climber in those days would learn more of the geography and varied beauties of the Alps in a single season than he does in the present day in five or six. As the Alpine Club grew and waxed stronger in numbers, so did the manner in which we took our pastime sensibly alter. A strong conservatism sprang up. Certain districts came to be more and more frequented. Certain peaks became popular, either because they were conveniently placed, or because there was a touch of romance connected with them, or, best reason of all, because they were difficult. And thus places like Zermatt and the *Æggischhorn* became the great centres of mountaineering, and have remained so since. The social nature of our Club brought this about. That this is so strong is matter for sincere congratulation. As long as it is so the Club must flourish. But this strong social feeling is not without its drawbacks, and I cannot but think it is a drawback if it tend to check what Mr. Hinchliff has termed cosmopolitanism in mountaineering. Mind, I am taking a broad general view of Alpine climbing in the present day. It is sometimes cast in our teeth that we have nearly exhausted the Alps. But we have, even in Switzerland itself, many large, important, and interesting regions, e.g. the *Silvretta* group, the *Rheinwald* group, or the outskirts of the *Bernina* group, almost unknown except perhaps to one or two of our members, while districts like Zermatt are absolutely done to death.

Let me turn, if need be, to the artists for confirmation. I think they will admit that they find comparatively little inducement to leave the well-worn fashionable districts, and paint scenery often far preferable from an artistic point of view. We are somewhat exacting in the conditions we impose

upon our artist friends. We demand absolutely faithful mementos, and at the same time works of art. Thus we limit their field. Let them paint, for instance, Monte Rosa or Mont Blanc from the well-known points of view, and ready purchasers may be found. But now take the same mountains from the south side—incomparably the grandest and most picturesque in both cases—and the works run a good chance of hanging neglected in the studio.

Again, while engaged in framing the programme for the Alpine season, it is customary now to hear complaints that it is difficult or even well nigh impossible to find new things 'to do.' Variety, however, of some sort must be discovered; and accordingly the old mountains are trotted out again and again, like the stag at a cockney hunt, and desperate efforts are made to find new sides and lines of ascent. This form of novelty, I agree with the writer in the 'Saturday Review,' must soon come to an end, if it has not done so already in some cases. But while we are thus exhausting in every detail these few spots, we seem to forget what numerous, what varied expeditions of a similar nature are still left to be accomplished. The absolute novelties may be few, but in many districts we could at least find expeditions of first-rate importance which have been done but seldom, and which are capable of much development. What I mean is, that, taken as a body, now-a-days we do not search out or know adequately as a whole the particular chain to which our mountaineering attention is almost exclusively directed. Of course this is not primarily a club of explorers. There are probably few of our members who have either the military genius or the elasticity of conscience which seem essential for such work in modern times. But, I maintain, we are not sufficiently cosmopolitan in the Alps themselves. We strive to find a fiftieth line of ascent up one of our old friends, and neglect many peaks or passes which, though not absolutely new, thanks to the past, are but little known to present climbers. Take, as an example, the Lepontine Alps, as described by Mr. Gardiner in a paper read before the Club last April, and printed in the present number. Here we have a good mountaineering district, lying close to much-frequented haunts, and yet almost unvisited. There may be more pleasure found in such districts, accessible at most times and in most states of the weather, than in waiting idly, as we so often have to do, for suitable days for climbing the more difficult but at the same time more hackneyed peaks. Perhaps a growing predilection for comfort and luxury in the Alps, as elsewhere, predisposes to this state of things. The

importance of the bill of provisions, and the prominent part it plays in all accounts of mountain expeditions, tend to prove that this may have some influence on our gregarious habits abroad.

The pages of the ALPINE JOURNAL, abounding, as they do, in the most varied matters of mountaineering interest, may seem to belie the assertion that the sphere of climbing is but limited. But this is more apparent than real; the broad question is not affected by the fact that every detail is hunted out and recorded for us. If the pages of the Journal fail to tempt our members to climb in other regions than the Alps proper, I can hope for little success in the same line. Still, I would fain draw attention for a moment to a question mooted in the last two numbers. These contain notes of ascents which are of the highest interest, opening up, as they do, the question of the limit, in an upward direction, of mountaineering. The question of the effect of the rarefied air in extremely high regions on mountaineers has really only lately attracted attention—a totally different thing, of course, from its effect on those who make balloon ascents. Remarks on this point, I trust, will not be thought too technical, for they bear, I hope, on the mountaineering of the future.

In these days we seem less subject to discomfort in the high Alps than in former times. De Saussure, in the account of his famous ascent of Mont Blanc in 1787, speaks a good deal of the difficulty of respiration. At his bivouac on the plateau, at an elevation of 13,300 feet, the effects of the rarefied air were much commented on. And these remarks are the more valuable inasmuch as De Saussure was an observer and a man of science, while his account, a thing rare in these days, is characterised by extreme modesty of description. The frequency of the respirations, he observes, which ensued on any exertion caused great fatigue. Now-a-days, however, mountaineers may be seen daily ascending, often untrained, at a very much faster pace than De Saussure seems to have gone; and yet the effects are scarcely felt.

Turn to the account given by Baron Man von Thielmann of his ascent of Cotopaxi, 19,735 feet above the sea. He experienced no annoyance from mountain sickness. And the still greater height has been reached (A. J. No. 59) by M. Wiener, of probably 21,224 feet. Of the effects noticed at this height I have no information.

Now the fatigue caused by the rarefied air is chiefly, I believe, the fatigue of the muscles of respiration. Any exertion will increase the number of the respirations, and con-

sequently throw additional strain on those muscles. But there is no reason why these should not be accustomed and trained to increased power just like those of any other part of the body. If, therefore, a man were to devote any time to this form of training, there seems no reason why he should not be able to ascend to very much greater heights than have yet been attained. The experiment in this form, that of gradually acclimatising—that is, training—this particular group of muscles, does not appear to have been tried, although it would be interesting, as well from the mountaineering as from the physiological point of view. He would be a bold man, I think, who would venture to set a limit to the power of man in this direction, and I myself am of opinion that most, if not all, of the great mountains could be ascended under these conditions.

After all, the accessibility of the Alps is one of their chief attractions. It is possible for a man, leaving Charing Cross Station at night (members will agree that this is a sufficiently low place), within forty-eight hours to stand on the top of Mont Blanc. Our time for the most part is limited, and we are not likely to forsake, at present, such a fascinating climbing arena as the Alps, for regions which do not offer such agreeable scope for this branch of the art. Nevertheless, if these heights are ever climbed, I trust that they will be by those who, like our members, have served a true apprenticeship in the mountains. For such, perhaps, these honours are still held in reserve. If novelties are essential to keep up the mountain enthusiasm, at any rate these offer a large enough field, or is it that they do not offer the necessary spice of risk? We must look to it if this be the case. It is the jaded appetite that demands stimulants.

It must have struck everyone conversant with recent Alpine literature, that the subject of danger from falling stones is alluded to much more frequently than was formerly the case. Now, as I have said, the expeditions principally described are ascents of old mountains from 'new sides'—to use a thoroughly Alpine phrase, for which I am almost tempted to substitute 'wrong sides.' Oftentimes the original explorers or climbers avoided these particular lines of ascent or descent from the obvious risk that would be incurred from this cause, not in the least because the difficulties of the climb appeared to be beyond their powers. Then come the ardent mountaineers of the present school, who justify their exploits on two grounds: one, that in the present improved state of the climbing art the risk run is not greater than that incurred by

the original explorers following their admittedly safer route—on this I have dilated elsewhere—another, that there is no real risk from falling stones. Now I cannot, and never will, agree with this. It is curiously illogical to argue, as some do, that, because few accidents have yet happened from this cause, there is no danger. It is mere fatalism to deny the risk. Some seem to imagine that because they have been struck by small falling stones or flying fragments, and not killed, therefore stones do not acquire sufficient momentum in falling to inflict serious injury. Let them study the mathematical laws which govern the impetus of these stones; let them examine the stones themselves, and find demonstrably that their heads are softer than these stones; then put two and two together. Surely it does not require a fatal accident to convince them. No, the risk run from this cause is a real one. That few of the most recently effected new expeditions are free from it—that those still unattempted in the Alps may be expected to be still more formidable from the same cause—is a sufficiently serious matter.

Remember, the high Alps are not the exclusive property of the Club. Where we lead, others may be, and are, induced to follow. The spirit and tendency of the Club, whatever it may be, in climbing matters, infects and guides those who do not belong to the clan, and especially those who seek to qualify themselves for admission.

What then? Are we to leave alone this fascinating region of the untried, or what little is left of it? I, at least, am not prepared to advocate this, but still think there should be some line drawn between problems of fair climbing, like, say, the Aiguille du Charmoz or the Dent du Géant, and problems which depend for solution, not upon skill, but only upon immunity from the missiles of the mountain batteries.

Closely connected with the subject in hand, so closely indeed that I cannot pass it over unnoticed, is the question of the relative value and efficiency of guides of the past and present day. On the whole there are probably as good guides now as ever there were. Amongst the younger present-day set of men are to be found as stalwart, as trusty, and as cunning mountaineers as of yore. But they are harder to discover. A swarm of inferior men has arisen, especially about Chamonix, who tend to drag down the average of excellence. Still guiding has, on the whole, improved since the days of De Saussure, when it was no uncommon thing to drop a porter into a crevasse from neglect of the rope, and fatal accidents seem only to have been avoided by a special Providence which

ordained that the man to drop in was always he who carried the ladder, whereby his fall was arrested. It has improved again since the Club first sprang into existence. But while as many first-rate guides may be found now, they have not increased proportionately to the whole number. More expeditions of first-rate importance are undertaken, for the number of mountaineers desirous of undertaking them has increased, and thus the inferior men are more often employed. Here is an element of risk which should not be overlooked.

In the old days guides were born mountaineers or born climbers—sometimes they seem to have been born acrobats. Witness the pleasant anecdote related by M. Martins of the octogenarian peasant and the phlegmatic Englishman—how the elderly man strove to exhibit his qualities as a guide—how, after divers fantastic feats, despairing of creating an impression, he hung, at last, by his feet from a slender tree that spanned a rushing torrent—how the other's phlegm was stirred, his countenance relaxed—how the aged one's abilities were recognised to the tune of one franc. Even were the present men all equally agile, this would not be enough. More than mere agility is now required; they must, or should, be truly and thoroughly guides. We have learned to appreciate the qualities of a guide as we have learned more of mountain craft.

Alpine climbing, regarded as a science, has its own individual charm. No need to carry up (I use the expression in an impersonal sense)—no need to carry up boiling-water machines, or dumpy levellers, or works on elementary trigonometry. Those who ascend mountains with no more scientific paraphernalia than a bottle with an easily removable cork, Liebig's extract, or a full tobacco pouch, can yet do well if, keeping still to their own line, they continue to develop the science of climbing. And if both guides and travellers work together in this, accidents, though they doubtless may occur, will be more and more unlikely to do so.

And what of the future? I have sought to show that we have made now-a-days more of a business, more of an art of climbing. The first enthusiasm may have passed. The more solid pleasures remain, and will remain. It is characteristic of Englishmen that they never take up anything as a pure pastime. They love to work it out in every direction, and develop whatever they have in hand to the utmost. We take our pleasure sadly. That is, we love to make the most of it. At least, in this we cultivate thoroughness. Is ours, like some

amusements, to be worked out and then laid aside? No, the Alps alone will last our time, and much more than our time; and should hereafter more cosmopolitanism creep in, the field open to climbers will be found wide enough.

Are we to leave undone that which can be done? To assert this would be to contradict myself. Emphatically I say no, but with this reservation. Let us use to the full the advantages derived from improvement in the art of climbing. One of the chiefest is, that we can recognise more fully, understand more completely, and thus minimise most successfully, the risks that are run. Expeditions without proper training, expeditions with incompetent guides, and still worse with incompetent companions, are risks run for which each one who runs them must be responsible. If climbing has been reduced to a business, then it should be looked at from a business-like point of view. We have sufficiently popularised our pastime. Let us endeavour by all means to improve it to the utmost of our power. Let this be the future of Alpine climbing, and the outlook is bright enough.

GLEANINGS FROM COGNE (II.). THE GRIVOLA AND TOUR DE ST. PIERRE. By R. PENDLEBURY.

WHEN in the company of my friends, Messrs. Cust and Taylor, and the guides Gabriel and Josef Spechtenhauser, I stood on the top of the Grivola in 1875, many a longing glance was cast down the beautiful snow ridge which forms the northern buttress of the mountain. It seemed far pleasanter to descend that way than by the wilderness of stones and scree through which the direct route to Cogne would take us. But as the pleasant pathway of the ridge would have led us, late in the day, on to a glacier of which we could only see the brow of an icefall, we gave it up and returned in the orthodox way to Cogne.

Next year, however, when my brother and I, with the same guides, were at Aosta, this ridge came into my head again. Little persuasion was needed to make the guides take kindly to my idea of ascending the northern side, as the difficulties, if there should be any, would be visible, and most likely possible to overcome: so that on Sunday, July 16, we set out for a bivouac at the foot of the peak. About half-way up the valley of Cogne, at a small hamlet where there is an inn, a short and steep side valley joins the main one. The head of this valley lies directly under the peak of the Grivola, and through it the

glacier we had seen the previous year sends its waters down to the main stream. At the very head of the valley we found a cluster of *châlets* standing on a grassy plain, and giving a perfect view of the whole northern face of the mountain. The glacier which fills the space to the eastward of the great snow ridge, we now saw ends by an icefall at the top of some steep and lofty cliffs, down which it sends two or three tongues of ice towards the valley. To reach the ridge it was obviously necessary to climb the cliffs and the icefall; and though we could readily see a way of doing so from below, we were not sorry that we had refrained from attempting the descent, more especially as late in the day ice avalanches would make the cliffs a somewhat lively place of residence.

The huts were uninhabited at the time of our visit, but with the help of a good fire and unlimited supplies of tobacco we passed a very merry evening. It is to be wished, by the way, that some one would undertake the defence of bivouacs. What views are comparable in mere beauty to those got from the side of a camp fire high up in the mountains? Men now-a-days object to the discomfort, and profess to be able to accomplish that dreadful feat, the making of 'good time,' better when they start from an hotel. One cannot but fear that those who hold these views are men to whom the fact of having been up a hill is all in all. For my own part I only wish that all 'hotels' other than the country ones, all huts, chains, and such like facilities were swept clean away. One cannot, of course, require that all Alpine climbers should admire the same things. Yet it is to be feared that both the one-day good-time-makers, and the hut-building chain-fitting associations are destructive to true Alpine feeling. Both are non-natural, and it is in its perfect naturalness that the charm of Alpine climbing consists.

We started early in the morning with a beautiful sky overhead. The rocks were attacked to our left, i.e. towards the true right bank of the glacier, and, after a certain height was reached, were crossed diagonally under the ice cliffs towards the most westerly ice-tongue. There might possibly have been some danger in this had the day been more advanced, as several gullies had to be crossed which clearly formed a high road for falling masses from the glacier above. In the early morning, however, this danger was small, and, in fact, nothing whatever fell while we were anywhere near the glacier. The rocks themselves gave us no trouble—they seemed made to be climbed. But on reaching the ice-tongue our difficulties began. The ice was very steep and greatly crevassed, and

our course became very erratic. The trouble of getting through a rather complicated ice-brow is sufficiently well known, and needs no further description. The guides found a way through the maze, and by the help of many axe-cut steps we contrived to follow them. On emerging on to the plateau of the glacier we found the snow ridge on our right hand, and at a very short distance from us, so that a few steps only needed to be cut in its side before we reached its back. From here the ridge stretched up in an unbroken curve to the point where it joins the western ridge a little to the west of the summit. Its ascent seemed only a matter of patience and perseverance, and so it proved to be. The guides, of course, had hard work enough; for the travellers the hardest work was that of trying to keep count of the number of steps which had to be made. Counting all together, those in hard ice and those in hard snow, we had long passed the thousand before the snow became so soft as to allow the axes to rest. However, all things, even snow ridges, come some time to an end, and so did this particular one; for at last a short scramble took us on to the rocks of the western ridge overlooking the Val Savaranche face of the mountain. The actual top was still on our left and a little higher; but a short rock climb, which took a quantity of time out of all proportion to its difficulty, landed us finally in safety beside the well-known cairn.

There are, then, three ways by which the Grivola can be ascended: viz., the route from Cogne by the great southern face, that from Val Savaranche, and that by the northern ridge. Of these the first two are rock climbs, while the last lies almost entirely over snow. Thus those who like variety can surely find it by passing over the top of the mountain from one side to the other, though the north ridge does not seem well suited for a descent, as it would probably be a little dangerous to attempt to traverse the glacier in the late afternoon.

We descended by the ordinary way to Cogne, pausing long to enjoy the beautiful view from the ridge of the Poucets, and again to disinter the skeleton of a fine bouquetin which that keen hunter, Josef Spechtenhauser, discovered lying half hid in a bed of avalanche snow. The horns, a very fine pair, were detached, and carefully hidden in Josef's knapsack, though, as we were all ignorant of the game laws of the district, knowing only that some dreadful punishment might be put on us for the mere possession of such things, it was not without fear and trembling that we approached the village, and laid the knapsack down right under the eyes of a

company of royal Jagers who were then in the village. Sad was the end of those horns. Josef hid them under some stones not far from *Cogne*, intending to pick them up again when we should return; but some dog probably, whose power of discovery was keener than that of the huntsmen, found them out, and spoiled the pair by making off with one.

Tuesday morning was spent in idleness; but towards evening we set off for the *Monei* huts, where we intended to pass the night, with *Jeantet* to show the road. *Jeantet* was very amusing. One does not often get an account of an ascent from a guide's point of view, and this pleasure we had as we walked up the valley. *Jeantet* told us how he had taken *M. Frassy* up the *Paradis*, and afterwards a German gentleman, who climbed fairly well. (This gentleman was *Jakob Anderegg*.) He assured us that we could not get up the *St. Pierre* from the *Glacier de Monei*, and gave us most elaborate directions how to get on to the upper part of that glacier, all of which directions I carefully translated to the guides, and all of which were most completely ignored by them the next morning, when they simply looked out for the glacier, got on it as soon as convenient, and walked up the middle, which was practicable enough that year and at that time of the year. The *Tour de St. Pierre* on this side takes the form of a rocky peak standing on the top of a long steep wall of ice. We went straight to the base, cut steps up the wall, and climbed the rocks towards the summit as long as they were practicable. Presently they became too difficult, and we turned a little to our right to the ridge which runs down to the *Col de Monei*, and finished the ascent by that ridge, the climb in parts being difficult. One difficult part was surmounted by means of a true chimney in the rocks. Immediately afterwards an accident befell us. *Josef*, who was leading, had contrived to pass up a very awkward spot, and was seated out of sight at the top of an overhanging rock of about 30 ft. high, at whose base the rest of us were. I attempted to follow, taking a different route from *Josef's*, and had just got into a position of very unstable equilibrium when a jerk from the rope pulled me off my foothold, and, as *Josef* was not directly above me, caused me to describe an arc of about 30° in space, ending with a violent bump against the rocks, the marks of which remained visible on my hands for long afterwards.

The top of the *Tour* gave us a splendid view. The weather was not too brilliant: there were clouds enough about to cast shadows as well as lights over the landscape, and to give an appearance of motion and life to the hills. A grand bird, whose wings measured full six or seven feet across, was sweeping

round the peak, in one of the recesses of which it probably had its nest. We were in the midst of a wilderness, but we could see out into the world, and even the desolateness of the wilderness had the appearance, not of death, but of potential life.

We went down to the Col di Teleccio, but avoided altogether the ridge by which the first climbers of the Tour had ascended. Instead of taking this ridge we went straight down the mountain side until we struck on a gully filled with ice or snow, down which we first crawled, and then, as the snow became better, glissaded, till we shot out on to the glacier close to the top of the col. This ascent, I think, deserves to be recommended, as, by taking this route from Cogne to the south, one gets splendid views of the head of Valontey, and of the Col di Monei and Col di Teleccio combined. It did not take long then to reach the châteaux in the Val Piantonetto, though we found the walk down to the main valley very long and exasperating. As so many other valleys in the district, the Val Piantonetto does not, like a well-conducted valley, run tolerably straight down to the great one, but gradually curves round towards the east, so that a traveller whose destination is Ceresole (as ours was) is compelled to walk at least twice the distance he should have to pass over. We only contrived to reach Noasca by nightfall, and, spite of the dreadful description given of the inn, we stopped there and were very comfortable. Indeed, whether it is that we are of a contented disposition, or for some other reason, we have often found ourselves perfectly happy in inns to which guide-books give most shocking characters. Here in Noasca, for example, it is true we could get no meat; but there was a plentiful supply of coffee and bread, soup, and an excellent omelette, and a sleeping-chamber which, though dark and gloomy-looking, possessed a couple of good beds. The people at the inn were kindness itself, and anxious to do everything they could for us, while the bill next morning amounted to eight paper lire for all four of us.

On Thursday morning we strolled quietly up to Ceresole, and spent the rest of the day amongst its luxuries; and on Friday we crossed the Col du Grand Tetre into Val Savaranche. The inn at Val Savaranche (Cantine de Nivolet) we thought was much improved. There is a large upper chamber which is quite endurable, while the dinner provided for us was laid out on the most luxurious plan. The place, indeed, though rough, deserves no longer the very hard names given to it by the early travellers in the district.

Saturday was to be the last day of our week in the Graians, and our business that day was to return by some pass to Cogne.

We knew that a royal hunting path afforded a very easy passage across the Col de Lauzon, and determined to make use of it. Fortunately, or unfortunately, we kept much too far to the south, and finally found ourselves on a glacier where certainly no hunting path was ever made. Our two guides seized the occasion to quarrel, the more violently as they were both perfectly right. Josef declared the hunting path to be away to the north, as it was. Gaber declared that to get into any path we should have to cross half-a-dozen side ridges, and that the only way for us was to climb a very steep ice-filled gully which lay on our right hand. Josef objected that by so doing we should get on to the great glacier (the Tribulation), all of which turned out to be perfectly true. At last we all separated; Josef climbed a rocky ridge to the left in a vain search for a royal col; Gaber doggedly marched up the rocks on the left bank of his gully; I followed Josef; my brother, like a wise man, quietly waited to see which side would win before committing himself to any decided line of conduct. He had not long to wait. Josef and I had not reached the ridge a pair of seconds before we saw that it would be most laborious to attempt to regain the royal road; so we meekly descended and followed the victorious Gaber up to his col. As Josef had said, we found ourselves looking down on the Glacier de la Tribulation, and that we had crossed the ridge at a point immediately to the south of the peak called on Baretto's map La Grande Serre. A dotted line on the map indicates a possible but not accomplished passage. Assuming, then, that we were the first to traverse the pass, we proposed to call it Col de Montandayné. The descent on to the Tribulation was by a short and perfectly easy gully. A few crevasses made the glacier itself at one point a little troublesome, but they were soon passed, and then, bending to the left, we quitted the glacier by a series of snow-slopes which led us to the top of a hunting-path on the road of the Col de l'Herbetet.

The view from this point is one of most extraordinary beauty. Indeed, of all the possible excursions about Cogne I should think that a walk up the Valontey and to the head of this hunting road is probably the most enjoyable. The whole circle of mountains, from the St. Pierre to the Grande Serre, with all the numerous glaciers streaming down from them, form a kind of amphitheatre, of which the head of the Combe forms the centre; and the general effect of the great mountains and dark valley is one whose parallel I know of nowhere.

HINTS ON SKETCHING IN WATER-COLOURS IN THE ALPS.

By GEORGE BARNARD. Read before the Alpine Club,
May 7, 1878.

WHEN about Christmas our excellent Editor asked me to give him a few notes on the use of water-colours in sketching from nature, I thought the presentation of my work on that subject would answer all purposes, as it would be always ready in the library of the Club for the consultation of those members who had a wish to sketch in their Alpine rambles; but as my friend the Secretary seems to think that a short paper, illustrated by such diagrams as I constantly use at Rugby, with a few studies of effects and elementary drawings, would be still more useful, I will venture to occupy a short time this evening in explaining my use of colours in studying in the Alps. Much that I am going to say may be known to all in the room, for it will be strictly elementary in character, and would doubtless prove very bald and uninteresting to those who do not intend using their brush. I have, therefore, placed on the walls a few finished drawings for the amusement of the eye, and for my artistic recruits some diagrams, sketches, and examples in the different elementary stages up to the finished drawing; for I have been told by my friend Mr. Ball, who knows about nature and art as much as most of us, that I could not be too clear and simple.

I will now begin by explaining in few words what I think is the wish of everyone whilst beholding the lovely and magnificent scenes that all of us enjoy in our long holidays. Yes, whilst we revel in the glorious mountains, whilst we bask in the floods of golden light on the summits we have climbed, or repose at midday in the grateful shade of the chestnut in the valleys, smoking the pipe of peace after our exertion, we have still an ungratified desire, for we exclaim: 'Oh, how I wish I could carry away a sketch of this scene, to show my friends where I have been, to recall to their minds as well as my own many such sunny hours of idleness!'

You will not expect me at this time to go into the theory of light and colour, for that, I believe, I have done in my work now lying on your table. Neither will I descant on the glories of Turner and the dexterity of the magic blots of Cox, nor yet upon the various collections in which these gems of art have been, or the enormous prices they have fetched. All this you can hear frequently enough at the

auktion rooms; as regards the good a young student learns by constantly frequenting such places, I believe it to be much like attempting to climb up a high ladder with all the lower rounds taken away. Well, I venture to say (and I think I have had some trifling experience of what young amateurs with perseverance can do) that almost everyone in this room could bring home many truthful and charming bits of nature in colour that would be eagerly sought and craved for by friends. Then think what an emancipation it would be to cast off the shackles of photography, which is always knocking you down, always asserting itself as the only truthful delineator of nature, with its black corners out of focus, its absence of skies, its nibbled and worm-eaten trees, and especially its total absence of colour. You see, gentlemen, having possession of the room for one night, I am taking (many will say) rather an unfair advantage of it, and even now I ask your undivided attention to the art of *Water-colour* painting for this evening, much as I admire the fine and truthful oil paintings of Mons. Loppé, which will hang on these walls to-morrow.

Now colour, whatever the medium used, how lovely, how engaging is colour! It is the first thing that strikes the eye, whether in the sweet blues or pearly greys of morn, the delicate but richer tones of sunrise on clouds and rocks, or the glowing and varied hues of sunset, and even in the Exhibitions and Galleries of pictures, colour is still the first to attract the eye across the room, and, when joined to accuracy of form and pictorial light and shade, the smallest sketch becomes of exceeding value. In fact, a little sketch-book filled with vigorous shorthand notes of form and colour is the best way of keeping a diary. One wants no other, for there is such a subtle connection between them and the mind that they are always afterwards joined in memory, and everyone is interested in looking at them. My time is limited, so I shall begin by supposing that nearly everyone here has had some instruction in drawing an outline from nature correctly, that they can place a subject naturally on paper; that they know, in fact, something of perspective, can make their sketch appear true, and convey to those looking at it whether it was taken from a high or low point of view. And here let me say that time thus spent should on no account be grudged, for I know well by experience that to satisfy the Alpine Club, who are so well acquainted with each detail of the mountains they have climbed, the greatest accuracy is required; and of course, if an elaborate outline is essential, it is better to be taken on one day and another time chosen for colouring, when

the effect is all that could be wished, and the fatigue that such labour occasioned would be passed away.

Now let us consider how you can gain sufficient knowledge of colour so as to use it with effect without encroaching too much on your time as climbers of summits, and in this case 'a little knowledge is [not] a dangerous thing,' but a very safe thing, and the very best way is to become thoroughly acquainted with the properties of the colours you are going to use, for, although this sounds like the mere A B C of painting, much time is lost making trials on the spot when every moment is precious in securing a fleeting effect, and also mixing many colours produces a muddy result, which would be avoided by using fewer and better chosen pigments. For instance, some colours are suitable for certain parts of a picture, such as Cobalt blue for the sky, as it works well in washes, makes good greys with Light or Indian red, and more purply tones with Rose madder or Crimson lake, but for the foreground it is weak; in fact, blue or bluish tones are the chief components of aerial or atmospheric effects, but must be kept out of the foreground. Indigo may be used near at hand, being stronger, and mixed with Gamboge and Burnt sienna makes useful greens. Again, French blue is more powerful than Cobalt, and gives force to the sky and distance; it also makes richer tones for the mid-distance and stronger greens, although not so deep-toned as Indigo; but French blue does not work in such level washes—it is apt to settle. As ice is so predominant in sketches of the Alps, I should add a colour called Cyanine or Leitch's blue, which is a compound of Cobalt and Prussian blue, and has a tendency to a transparent green. There is in this very room a beautiful and truthful study of a glacier presented to the Club by that talented amateur, Sir Robert Collier; there you will find an example of ice with the warmer tones of the superincumbent débris of rocks most faithfully portrayed. I must continue to describe the more useful pigments. Indian yellow is a vigorous colour, but must be used with caution in the skies and distance, as it is advancing in its nature; so is Cadmium, but more opaque. Of all the yellows, Yellow ochre is the most generally useful. It is called by artists modest and retiring—I suppose because it keeps its distance. It is a cloudy or semi-opaque colour, and is much used mixed with a little Light red or Brown madder as a first delicate wash over the paper; the greens made with it, if a little opaque, are well suited for the mid-distance.

I do not use Sepia much after the first practice with the

brush is gained, as Vandyke brown is more generally useful, making with Indigo or French blue fine deep greenish tones for water in shadow; also, with a little Crimson lake or Brown madder added, it will give you many excellent and true tones for rocks. As I have placed a large diagram of the full colour-box with a detailed description on the walls, and also some enlarged examples of the tones thus made, I think I need only refer you to them, adding that it is best to adopt a regular place for each colour in the box, beginning with yellows and going on to orange, reds, blues, and mixed colours. As I suspect very few will like to carry a full artist's colour-box, I have laid on the table a smaller and therefore more portable one, with a place for a brush or two and a pencil. Also, you will see a block or two of white and slightly toned and not much-sized paper, such as Harding used, and which is now called after his name.

Well, now for the method or system of water-colour drawing. First, recollect it is, or ought to be, a transparent style, not like the tempera opaque manner for scene painting, nor yet like the oil or mixed way, such as the old Dutch painters used. And here let me mention the advantage of using moist water-colours in sketching, which are ready at any time, requiring no setting or unsetting of the palette, as in oil, or washing of brushes, when one is fatigued at night, and a block of many sheets of paper is much more portable than canvases. In water-colours you ought never to lose sight of the white paper; it forms the light of the picture; but, as white paper in itself is opaque, a first wash of some transparent and warming colour, such as yellow ochre and light red or brown madder, should be passed over the whole, and this may be gradually changed to stronger and richer tones in the foreground. It is wonderful what a skilfully graduated wash will do for a sketch; it takes away anything like grease and pencil dust, fixes in some degree the outline, and leaves the paper damp and more ready to take the succeeding tints of colour. Here I would say that water-colour studies should progress thus: First, floating washes; then blots or tints of colour; and lastly, touches more or less defined. But the amateur must not expect to acquire suddenly the power of Cox, with his wonderful blots of exquisite colour. This was the result of a lifetime of devoted work, and will not readily be met with again. Neither must he hope to get on the spot tenderness of colour or sweetly graduated tones; in fact, these form aerial perspective, and are gained by practice and study indoors, but he will enjoy more and more the harmony of colours he finds,

especially in the morning and evening. The reason why these hours are the best to study light and shade and colour is simply that at such times there is more vapour, more cloud, and therefore more for the rays of the sun to impinge upon and affect with a strong predominating light. Those who have not had much practice in copying nature and painting pictures on the spot, are apt to forget that colours are wonderfully modified by the quality and quantity of air or vapour that intervenes between the different objects and the spectator, and this must on no account be omitted; the colour of objects must not, therefore, be put in the picture, as one knows it to be when close at hand, but as it is seen with the veil or screen of air between. In fact, the student must copy at such times just what he sees and not what he recollects, and it will assist him also to remember that all colours are altered by distance, with the exception of white, even black; this forms aerial perspective, without which all pictures will be flat, crude, and untrue.

It is necessary, perhaps, to add that some difference must be made in the colour of branches on the same tree and very few feet apart, also in the tones of the foliage. Attention to this will make the tree appear round and true, so that birds could fly between the different boughs.

From the innumerable questions that are put to me by amateurs about making their sketches into pictures, I am induced to remind you that you should endeavour to get breadth of light and shade; that is, light should not be divided by small masses of shade, nor shadow divided by small masses of light. Also recollect that when you bring the strongest shadow near to the lightest part you will be more likely to focus the effect, and you will much increase the power of the tones by contrasting one colour harmoniously with another, as you see arranged in one of my diagrams.

The young Alpine climber, with limited time and perhaps not overstocked with patience, can scarcely be expected to pursue the same careful and systematic mode of operation that an artist practises in his studio, but should try on the spot to copy such of the colours and effects as he wishes to keep in remembrance, always recollecting that he must begin with the colours that predominate. For instance, if it is a purply grey passing into a greenish tone, he mixes the lake and blue first, and then adds a little yellow ochre. A little crudeness is preferable to too much mixing, which produces muddiness. But whether artist or amateur he must set some bounds to his ambition, and not try to get into a small piece of paper a pano-

ramic view. Let him limit himself to one summit or mountain at a time, making that alone the subject of his picture, and sacrificing all others to enhance or elevate its beauty. Surely a Matterhorn or a Weisshorn is enough to bag at once; nor must he try to get in a range of five or more grand peaks, like a row of skittles, for in that case one will most assuredly dwarf the others and the whole effect become map-like and commonplace.

Another hint. Foreground and distance should partake of the same character, should convey the same idea or the same feeling. For instance, although Turner may be allowed to introduce into a picture of sunny Italy some dancing half-clad figures with tambourines and pipes, they would not be appropriate in the wild and rugged scenes of the high Alps. To be sure, a recumbent figure or two in grey, with pipes of another sort, might do.

I don't know whether it is true or not, but I like to imagine that something of an artist's feeling and character is infused into his work and will appear in it; at any rate I know that, although I think I am sufficiently gregarious generally, I prefer being alone when studying, for people with commonplace ideas are then rather a nuisance. I cannot but recall one evening whilst contemplating a glowing sunset on the ridge of the Gorner Grat. It was in those precious moments when it becomes too dark to continue working, but not too dark to drink in the fading glories of the 'parting day dying like the dolphin,' as Byron sings. A stout John Bull, with his chimney-pot hat, black clothes, and umbrella, came stumping across the remains of snow, with wife and daughter toiling after him. He placed himself right before me, and wanted to chat about the great perils and exertions he had gone through. Fortunately in five minutes' time he started away with 'Well! we've seen everything, and done it all; it's very fine, very fine! Now let's go down and get a comfortable table-d'hôte at Zermatt.' One requires a few moments' repose to recover the proper serenity of temper to study again after the departure of such Goths; but enough, let me rather try to bring to remembrance a few of those lovely effects that I as well as most of you have seen.

At the Monte Rosa, Zermatt, for instance, I was once fortunate enough to secure a bedroom which gave me a sight of the Matterhorn at early morn, and for ten successive days did the glorious sun rise unclouded, in tones of the loveliest saffron hue, and as I always slept without blind or curtain I was sure to be awakened by a flood of glorious light. This, con-

trasting with the retiring purple greys of clouds and sky behind, and the solemn depths of the pine forests beneath, made a most complete picture, and recalled to my mind some lines in the *Odyssey*, beginning:—

‘ The saffron morn, with early blushes spread,
Now rose refulgent.’

I don't know what our early-rising climbers may think, but I have a feeling that the most enjoyable and pictorial time of day in Switzerland is from the earliest glimmer of dawn till the full light of the sun blazes into day.

Another effect of early dawn it was my good fortune to see from the Col de Balme. Here the monarch of mountains was grandly relieved by the most intense of deep blue skies, while the faintest blush of morn lit up the *Aiguilles Rouges*, reminding me of Coleridge's wonderful hymn.

I have placed this picture of *Mont Blanc* on the walls that you may see the effect of a most careful piece of stippling with ultramarine. We should recollect that all effects vary in tone, and in painting those that are altogether low in scale, we may proceed to far greater extent with the first general washes. Thus the same deep grey tones may, as in this picture, be brought all through the different distances even to the foreground, and thus air is introduced and breadth preserved.

In the moonlight on the Lake of Lucern, near Brunnen, studied on the spot for many successive nights, the highest lights are on the clouds, the moon itself being behind a dark cloud; thus the brilliancy is enhanced. A certain warmth and luminosity has also been given by repeated washes of Indian yellow and Indian red; then the blue greys with Cobalt and Indigo will not appear cold or black, for blackness is untrue and ruinous to aerial perspective.

If I am not tiring you, I should like to go on with one or two more descriptions of scenes that have left a vivid impression on my mind, and, although they may be all drawn from the secondary heights, I fully believe these points are far better for obtaining fine and varied pictures than the summits of mountains. We have lately heard from Mr. George and Mr. Ball of the great beauty of two valleys of this character, in which I studied many years ago—the *Val d'Aosta* and the *Val Anzasca*. They are both wonderfully beautiful, and well suited for the first attempts of the young sketcher, because they abound in fine and striking contrasts of light and shade and colour. There you have Spanish chestnuts with their deep yet rich greens overhanging the vines on trellises, the

purple clusters contrasting with the golden maize beneath ; just note the gorgeous contrast of colour, and then casting your eyes through the upper boughs let them dwell on the pure snows of the mountains beyond, and, oh, how you wish to be on them !

Perhaps it may be permitted to one who has traversed the valleys of the Alps many years before the Alpine Club was thought of, to say that if the young Alpine climber would diversify his arduous climbing by a few leisurely strolls in the valleys at his feet, and not be so anxious to follow one after the other in the beaten track, he would find abundant beauties and greater variety of subject ; he would also take more interest in scenes that artists love to paint, and which allow much greater play of light and shade in the different tones and local colours of the objects around him.

Once after crossing the Moro early one morning, I reached the centre of the grand amphitheatre of glaciers that descend from Monte Rosa, and came upon such a spot, and, by the bye, I often wonder you despisers of huts do not at any rate build one here, where a poor artist could study the innumerable effects that are continually passing before him. I sat in solitude there all day, on and amongst the seracs, but with a shattered pine and tuft or two of grass in the foreground. The excessive silence was only broken by the solemn roar of descending avalanches. The stillness became oppressive, and almost more than I could bear. I suppose I was exhausted by study, and a fatigued brain making incessant noise a burden, I was at last absolutely driven away by the ceaseless hammering of myriads of grasshoppers with their chink, chink, chink. Just imagine the degradation to an artistic mind to be overcome by a grasshopper ! It was only when I had demolished, with the assistance of Frank Andermatten and Ulric Lauener, a fine boiled marmot at the little inn at Borca, that I recovered my spirits.

I dwell on these recollections, for much of the success of the artist or amateur depends on reproducing the effect of predominating tones that have struck his imagination, and we all must allow full time for such feelings to enter in and possess the mind before we can hope to put them on paper. I therefore venture to advise my young friends, who intend to add drawing in water-colours to their accomplishments, to arrange to go with congenial minds who will be content to stop for an hour or two or even longer ; if this is not thought of beforehand, both may be made very uncomfortable.

Many years ago I was blessed with one of the most delightful of all companions, and that was my brother-in-law,

Michael Faraday. He enjoyed nature as much as I did, and was always quite happy to lounge about, geologising or botanising, or even sleeping as long as I wished to remain; but once I had a very different companion. I was going over the Diablerets from Bex to Sion, when a young Englishman said he should like to join me, and have one porter to carry both our knapsacks; so it was settled, but the result was most unfortunate for me, for he was seized with a stampede, or desire to rush on, and although I saw many beautiful bits, he declared he would not stop till he got to the top, and when there he said he would not stop till the bottom! So much for unequal unions. Far better would it be to seat oneself on one good spot, like our friend the King of the Riffel, seizing effects or catching travellers for a parley as they pass before him. If a rolling stone gathers no moss, neither does a thirty mile a day man, who will look at nothing, gather many beautiful recollections.

In conclusion, I do most earnestly wish that I possessed a tithe of the soul-inspiring power of Professor Ruskin, so that I might hope to have imparted by the few words I have spoken some idea of the delight and beauty that arise from attempts to study and depict the glorious forms and colouring that we see in the Alps; so that some portion of the enthusiasm that the members of the Alpine Club possess for ascending mountains might be pressed into the service of art. If Professor Ruskin can turn a whole troop of students into road-makers, and cause them to labour most ungrudgingly with spade, pickaxe, and wheelbarrow during the long vacation, would it not be possible that a few of my audience might be persuaded by the conviction that every stroke of the pencil, every dash of the brush, will not only be rewarded by the possession of remembrances of form and colour, but will be the means of recalling during days of severe brain-toil some of the most enjoyable experiences of their holidays, and in this belief for them to give this vacation the hitherto neglected colour-box a place in their knapsack?

THE FIRST PASSAGE OF THE COL DU GÉANT.

The editor has received the following very interesting communication from M. Durier, the author of 'Le Mont-Blanc':—

Paris, 28 août 1878.

Monsieur,—J'ai lu avec un vif intérêt votre article *The History of the Buet* dans le dernier numéro de *l'Alpine Journal*. Comme je ne

doute pas que ce genre de recherches ne soit également bien accueilli par vos collègues, je vous demande la permission de vous communiquer les renseignements suivants qui me paraissent de nature à éclaircir la question si confuse des premiers passages authentiques du Col du Géant. Lorsque j'écrivais le *Mont-Blanc*, il m'est souvent arrivé de relever dans les livres que je consultais des citations d'après le *Journal de Genève*, mais ce n'est que depuis peu que je suis parvenu à mettre la main sur cette feuille. Il y a eu, en effet, un assez grand nombre de périodiques qui ont porté en titre, ou en sous-titre, la qualification de *Journal de Genève*. Celui dont il s'agit était un journal hebdomadaire et n'a pas eu longue durée. Le premier numéro porte la date du 4 août 1787, le dernier celle du 8 janvier 1791. J'en crois les exemplaires assez rares. Il en existe un, pourtant, à la Bibliothèque de la rue Richelieu, où il est catalogué dans l'Inventaire sous le No. G. 4547 et forme 2 volumes in 4°. Or, on trouve dans le No. du 15 septembre 1787, la lettre que je transcrib ici avec son orthographe :—

‘ Lettre aux Rédacteurs du Journal.

‘ Messieurs,—Les voyages vraiment intéressants qu'on a faits sur le *Mont-Blanc* l'année dernière et cette année m'enhardissent à vous faire part de celui de la vallée de *Chamouni*, en Savoie, à *Cormayeur*, en Piémont, par les glaciers *des Bois* et du *Tacul*: je l'extrahs d'une lettre datée du 28 juillet 1787, que je reçus quelques jours après de M. *Eschaquet*, directeur des fonderies du Haut-Faussigny et membre de la Société des Sciences Physiques de Lausanne, homme d'un mérite rare et dont la modestie fait mieux apprécier les connoissances, l'étonnante agilité, le grand courage et la vraie intrépidité.

‘ En m'entretenant des expériences qu'il a faites en divers lieux sur la combustion, il ajoute :

“ Le lieu le plus bas où j'ai fait des expériences est la plaine de *Chèdes* sous *Passy*, élevée d'environ cent toises au-dessus du lac de Genève, et l'endroit le plus élevé est le haut de la vallée de neige du *Tacul*, dont l'élévation est estimée à environ 1,800 toises au-dessus du même lac. Je partis du *Prieuré de Chamouni* le 28 juin 1787, à deux heures et quart du matin ; j'étois sur le haut de la vallée de neige du *Tacul* à deux heures et demie de l'après-midi, et à huit heures du soir je me rendis à *Cormayeur* ; j'étois accompagné de *Marie Coutet* et de *Jean-Michel Tournier*.* Plusieurs personnes de *Chamouni* disoient que ce passage étoit devenu impraticable, depuis environ cinquante années, par l'augmentation des glaces : nous n'avons cependant éprouvé dans cette traversée aucune difficulté.”

‘ Dans un autre paragraphe de la même lettre M. *Eschaquet*, en m'indiquant les observations qu'il avoit faites sur le haut de la vallée de neige du *Tacul*, me dit : “ Le vent étoit sud-est assez léger ; le ciel étoit d'un bleu foncé, presque partout serein, à l'exception de quelques brouillards épais autour des aiguilles qui me dominoient ; le thermomètre, dit de Réaumur, étoit à onze degrés sur 0 ; l'esprit de vin eut de la peine à s'enflammer,” etc.

‘ Dans le courant du mois de juin M. *Eschaquet* me fit part de ses tentatives pour franchir le passage de *Chamouni* à *Cormayeur* par le glacier du *Tacul*, et du succès de ce voyage fait en 1786 par un Anglois nommé M. *Hill*, qui étoit parti de *Cormayeur* avec *Marie Coutet*, et arrivé à *Chamouni* par les glaciers du *Tacul* et *des Bois*. Cet Anglois assuroit (ce que M. *Eschaquet* m'a confirmé depuis) qu'il n'existoit dans cette traversée qu'un passage vraiment difficile pour toutes personnes peu accoutumées à parcourir les vallées de glaces ; c'étoit la descente du glacier du *Tacul*.

* Ce sont de très-bons guides de la vallée de Chamouni. (*Notes de l'original.*)

'Ne seroit-ce pas par cette route qu'un nommé *Ribel*,* d'abord coureur, puis tonnelier à Genève, avoit porté avec la plus grande célérité des lettres de Genève à Turin, il y a une cinquantaine d'années environ? Les renseignements que je m'empressai de demander à cet homme extraordinaire, peu de jours avant sa mort, sur ce passage, me porteroient presque à le croire.

'J'ai l'honneur d'être, etc.

'HENRI-ALBERT GOSSE.

'Genève, ce 24 août 1787.'

De cette lettre curieuse il résulterait :—

1. Selon toute apparence, c'est l'exploit de *Ribel*, effectué vers 1737, qui a donné naissance à la légende selon laquelle le Col du Géant, jadis praticable, aurait été depuis un demi-siècle obstrué par les glaces. Or, rien n'indique que *Ribel* ait trouvé le passage plus libre que du temps d'*Exchaquet*; si c'eût été le cas, *Gosse*, qui a questionné cet homme, aurait sans doute mentionné une circonstance si extraordinaire.

2. Après *Ribel*, le Col du Géant a été franchi pour la première fois, de Courmayeur à Chamonix, par *Hill*, avec *Marie Couttet*.

3. Le Col a été franchi, de Chamonix à Courmayeur, par *Exchaquet*, accompagné de *Marie Couttet* et de *Tournier l'Oiseau*, le 28 juin 1787.

Voici cependant une difficulté.

Le même numéro du *Journal de Genève* contient la relation du passage de *Bourrit* et de son fils avec les guides *Cachat-le-Géant*, *Tournier l'Oiseau*, *Charlet*, etc., effectué le 28 août 1787. Dans ce récit il n'est fait aucune allusion aux traversées précédentes. Mais le numéro suivant (22 septembre) renferme un *Supplément au Voyage de M. Bourrit*, où on lit ce qui suit :

'Parvenus sur le détroit du Mont-Fruitier (*le Mont Fréty*) nos voyageurs se rappelèrent que ce fut là le *non plus ultra* de *M. Hill*, Anglois, qui, l'année précédente, y étoit arrivé par *Cormayeur* avec les guides *Pierre Balmat* et *Marie Coutet*. La rapidité des plateaux supérieurs au glacier du *Tacul*, et les énormes crevasses qu'il auroit eu à traverser pour descendre du côté de *Chamouni*, l'arrêtèrent : nos voyageurs craignirent qu'il ne leur en arrivât autant, vu les circonstances fâcheuses qui les accompagnaient. Ils étoient cependant rassurés par les guides *Cachat* et *Tournier*, qui, deux mois auparavant, s'étoient ouvert cette route. Ces deux guides, dont la hardiesse et le courage furent admirés à *Cormayeur*, revinrent à *Chamouni* avec une attestation du juge du lieu, qui constate qu'ils sont les premiers qui ont pénétré en Piémont par la mer de glace.'

Ce commentaire, qui enlèverait à *Hill* le mérite d'être le premier touriste qui ait franchi le Col du Géant, a évidemment été inséré dans le but de réfuter la lettre de *Gosse*. Quelle foi faut-il y ajouter? Pour ma part, je n'y vois qu'un exemple de la tendance des guides à nier la réalité des ascensions dont ils n'ont pas eu l'honneur, et, en particulier, un effet de l'incurable jalousie de *Cachat-le-Géant*. Vous avez fait remarquer avec raison que la caravane de *Bourrit* n'aurait pas persisté à avancer malgré le mauvais temps, si le passage n'avait

* Ce *Ribel* m'a dit (ce qui m'a été attesté par plusieurs de ses contemporains) qu'il avoit fait cette traversée dans l'espace d'un jour et demi. Il alloit de Genève à Francfort-sur-le-Main plus vite que le courier. (*Note de l'original.*)

déjà été effectué. Il paraît tout aussi évident qu'Exchaquet n'aurait pas entrepris d'aller faire des expériences au Col, si Hill ne l'avait renseigné sur la possibilité d'accomplir la traversée entière. De même c'est le succès d'Exchaquet qui a décidé de Saussure à établir son observatoire au Col du Géant. Peut-on admettre, d'ailleurs, que Hill, venant de Courmayeur, ait été arrêté 'au détroit du Mont Fréty' (c'est le Col même évidemment) 'par les crevasses qu'il aurait eu à traverser pour descendre,' c'est-à-dire, sans doute, par les séracs du Tacul, par des difficultés qu'il ne pouvait même apercevoir du point où il s'était arrêté? En ce cas, il faut convenir qu'on n'aurait jamais vu de touriste plus timoré. Quant à l'attestation donnée par le juge de Courmayeur à Cachat et à Tournier, elle ne contredit point la réalité du passage de Hill, puisque ces deux guides étaient, en effet, les premiers qui eussent fait la traversée dans le sens de Chamonix à Courmayeur . . . avec Marie Couttet, cependant, qu'ils se gardent de nommer.

Car, de toute façon, il est clair que Marie Couttet est le premier guide qui ait passé le Col du Géant. C'est ce que j'ai eu soin de dire dans l'allocution que j'ai eu à prononcer, le 11 août dernier, à l'inauguration du monument élevé à Jacques Balmat. Marie Couttet accompagnait Hill, il accompagnait Exchaquet, et c'est clairement à l'excursion d'Exchaquet que font allusion les guides de Bourrit quand ils se vantent d'avoir traversé le Col deux mois auparavant (28 juin—28 août).

Enfin, monsieur, j'ai relevé dans le même journal le récit du voyage de Bourrit au Mont-Blanc le 5 août 1788 (Nos. des 23 et 30 août 1788). Dans cette narration, où, pour la première fois si je ne me trompe, les *Grands-Mulets* sont désignés sous ce même nom, Bourrit nous apprend que M. Woodley était 'fils du Gouverneur de l'Amérique Anglaise.' Camper était fils du docteur Pierre Camper, né à Leyde, mort à La Haye en 1789, grand voyageur lui-même et qui s'est rendu célèbre par des travaux de médecine, de paléontologie et surtout d'anatomie comparée. Woodley seul a atteint la cime avec quatre guides : Jacques Balmat, Dominique Balmat (frère aîné de Jacques), Cachat et Alexis Balmat.

Veillez, monsieur, excuser cette longue lettre et me croire votre bien dévoué

CHARLES DURIER, C.A.F.

NEW EXPEDITIONS IN 1878.

Maritime Alps.

CIMA DI NASTA, *Sept. 27.*—Mr. Douglas Freshfield, with François Devouassoud, climbed this peak from the Baths of Valdieri. They ascended through the Val dell' Argentera and over a false col to the pass north of the peak, and thence to the summit. The proper route, by which they returned, is from the head of the Val di Gesso, whence an easy ascent leads to a small tarn not shown on the Piedmontese map (which is hopelessly incorrect in this region), between the Cimà di

Nasta and the Cima della Culatta. The rocks on the S. face of the peak are easy. There was so much new snow on the mountains that 'timcs' would only mislead. The peak is slightly higher than its neighbour, the Cima della Culatta, which is crowned by a large stone-man, and it also overlooks the Cima del Mat. It is possibly the third peak of the Maritime Alps, being about 250 feet lower than the Rocca dell' Argentera, or 10,300 to 10,400 feet. The view includes the French coast from the Iles d'Hyères to Mentone, and extends from Corsica to the Adamello range.

Dauphiné District.

SEGURET FORAN.—PIC DES ARCAS.—On July 12, Messrs. Charles and Lawrence Pilkington, and Frederick Gardiner, *unaccompanied by guides*, made the first ascent of the highest peak of the Seguret Foran, known as the Pic des Arcas (3,467m.). Having passed the previous night at the chalets of Chambran, in the Val de l'Eychouda, they started on the morning of the 12th by lantern light at 2.12. Crossing the Torrent de l'Eychouda, they mounted the steep slopes of loose shale, marked in the Government map Coste Vieille. Climbing in a north-westerly direction, they reached a small glacier (incorrectly marked in the map) closed in on both sides by the numerous peaks of the Seguret Foran. At the head of this glacier a steep snow couloir leads to the main glacier of the group, crossing which they reached the Pic des Arcas at 9.15 A.M., and from it enjoyed a superb view of the Dauphiné and Pennine Alps. After remaining an hour and three quarters on the summit, they returned to the chalets of Chambran by the same route at 2.15 P.M. On the second peak of this group, not many feet lower than the Pic des Arcas, and separated from it by a short snow ridge, they found the cairn erected by M. Rochat, who made the ascent from Monestier last year, but the ascent of the Pic des Arcas and the exploration of the massif from the Val de l'Eychouda had not hitherto been undertaken. On July 19, Mr. Coolidge, from the Pré de Madame Carle, made the second ascent of the Pic des Arcas, and confirms the fact of it being the highest point of the group.

PIC DES OPILLOUS (3,506m.), July 14.—The same party, *without guides*, made the second ascent of this peak. Leaving the 'Refuge des Bergers' above Entre-les-Aigues at 1.30 A.M., they reached the Col du Sellar at 7 A.M., and the summit at 11 A.M. The ascent from the col was made by the southern arête, which is uniformly difficult throughout, and required the utmost caution, especially in the descent. On the summit they found the cairn and card of Monsieur Lionel Nigra, who made the first ascent of this peak in September last year. Nothing, however, was known of the first ascent either at Entre les-Aigues or at Ville Vallouise, so that it probably was made from the Val Godemar. They returned to the Refuge des Bergers at 4.15 P.M. by the route taken in the ascent.

PIC JOCELME (3,585m. ?), July 15.—The same party, *without guides*, made the first ascent of this peak from the same gîte occupied by them for the Pic des Opillous. Leaving their night quarters at 1.45 A.M., they mounted a steep glacier between the eastern ridge of the

Opillous and the Pic Jocelme, culminating in an almost perpendicular couloir, the top of which was reached at 7.15 A.M. They then crossed the western face of the mountain, over very difficult ice-covered rocks, to a steep glacier, descending almost from the summit. After two hours' step-cutting the summit was reached at 10.10 A.M. The Pic Jocelme is in reality the second peak of the 'massif' known as Les Bans, and is connected with it by a long and apparently impracticable arête. The col between the Jocelme and the Opillous is scarcely practicable on the western side, owing to a constant cannonade of falling stones from both these peaks. On the eastern side of the pass stones also fall, but not in such dangerous quantities, and were it on that account alone this expedition cannot be recommended for repetition. They returned to the Refuge des Bergers at 2.45 P.M.

CRÊTE DE LA BÉRARDE.—PIC DU VALLON, July 21.—The same party, *without guides*, made the first ascent of this peak from the Glacier Noir, having passed the previous night in a high gîte under the eastern ridge of the peak, facing the Pic sans Nom and the Aile-froide. They left their sleeping quarters at 3.40 A.M. and mounted over loose shale and avalanche *débris*, until the upper snowfield covering the southern face of the mountain was reached, from which they gained the eastern arête, and by it arrived on the summit at 7.35 A.M., no difficulty having been encountered except during the last fifteen minutes of the ascent. No traces whatever were found of the cairn erected by Mr. Coolidge, who made the first ascent of this peak from La Béarde last year. Estimated barometrical height, 12,400 feet. After enjoying two hours on the summit in perfect weather, they descended by the same route to their night quarters, at 11 A.M., and to Vallouise the same afternoon. The French Alpine Club have recently erected an excellent hut on the Pré de Madame Carle, viz., the 'Refuge Césanne,' from which this expedition could be more comfortably undertaken than from the gîte on the Glacier Noir.

AIGUILLE DU SOREILLER.—The same party, *without guides*, made the first ascent of this peak on July 24. Leaving La Béarde at 3.23 A.M., they followed the path down the valley of the Vénéon until about fifteen minutes below the village of Les Étages. Turning to the right over steep rock and grass slopes, and keeping the first stream, descending to the right of the valley of the Vénéon, well to their left, they entered a steep and narrow valley, the head of which opens out into an amphitheatre of glacier-worn rocks, climbing which they reached the small glacier under the final peak. From the glacier the ascent was made by the southern face of the mountain, partly up a steep couloir and rather difficult rocks, until the ridge connecting the Aiguille du Soreiller with Le Plaret was reached. From that they arrived on the summit at 11.15 by the eastern arête. The top of this peak is formed by a huge upright block of rock, on which the whole party could scarcely sit at the same time. The descent was made by the same route, and Les Étages was reached at 4.10, and La Béarde at 5 P.M. Estimated barometrical height, 11,340 feet.

VARIATION OF THE COL DE LA MUANDE, OR COL DE CHALANCE.—The same party, *without guides*, left the châlets of La Lavey at

4.12 A.M. on July 28; and mounting towards the ridge at the head of the Glacier du Fond, they crossed it at a gap about equidistant between the Col de la Muande and the Cime du Vallon, at 8.12 A.M. Bearing to the right, over snow-slopes and rocks, they rounded the buttress of La Rouye Pic, and descended by a steep gully to the Val de Chalance. From the upper plateau of this valley a slight track leads direct to La Chapelle, in the Val Godemar, which was reached at 11.55 A.M. They propose the name of Col de Chalance for this pass.

ROCHE D'ALVAU.—The same party, *without guides*, made the first ascent of this peak on July 31. Leaving La Bérarde at 3.30 A.M., they mounted the moraine and Glacier de la Bonne Pierre, as if for the Col des Ecrins, until the upper plateau of the glacier was reached. From that they attacked the mountain by the southern face, and climbed by a series of couloirs over loose rocks to the summit, which was reached at 9.45 A.M. The view of the Ecrins from this peak is splendid; but on the north side, the Glacier de la Platte des Agneaux and the arid upper valley of the Romanche, backed by the barren hills above the Lautaret road, suffer considerably by contrast. After spending an hour and a half on the summit, in lovely weather, they descended by almost the same route to the Bonne Pierre Glacier, and reached La Bérarde at 3.30 P.M., and St. Christophe the same evening. Considerable time was lost in the descent of the upper portion of the peak, owing to the loose nature of the rocks.

RÂTEAU.—The same party, *without guides*, made the third ascent of this peak, and first from the Glacier de la Selle, in the Vallon du Diable, on August 2. Having passed the previous night in the unfinished Refuge de la Selle (now in course of erection by the Société des Touristes du Dauphiné), they started at 3.30 A.M. Mounting over rocks and avalanche *débris*, under the Pic de la Grave, they reached a large snow-covered plateau on the Glacier de la Selle, above the ice-fall, and from it climbed to the depression in the ridge between the Râteau and the Tête du Replat, forming a col leading to the Glacier des Etançons (Mr. Coolidge's Brèche du Râteau), arriving at 5.30 A.M. From that they reached the summit in two hours by a long snow arête, the snow being in splendid condition. The view is perhaps as fine as any that can be obtained in the whole Dauphiné group. They remained nearly two hours on the summit, and returned to the Refuge de la Selle shortly after midday. The Râteau had been twice previously ascended, once from the Vallon des Etançons, and once from La Grave.

AIGUILLE DE L'ÉPAISSEUR (3,241 mètres = 10,634 feet), COL DE PIERRE FENDUE (c. 2,925 mètres = 9,597 feet), *June 28*.—Mr. Coolidge with Christian Almer and his son Christian, starting from Valloire, followed the usual track up the Vallon des Aiguilles d'Arve to the highest group of châteaux, and then mounted along the right bank of the torrent, descending from the east flank of the Aiguille de l'Épaisseur. Two steep steps led to gently inclined snow slopes, over which the col to the N.E. of the Aiguille de l'Épaisseur (which it is proposed to call Col de Pierre Fendue) was reached in 4.50, walking from Valloire, close to the point marked 3,035 mètres on the map. From the col the first ascent of the Aiguille de l'Épaisseur was made in two hours during

a violent storm, which necessitated several halts, mainly by the east arête and face. Clouds entirely concealed the view, which was expected to be very interesting from a topographical point of view. Returning to the col in 35 minutes, the party descended by slopes of débris to the head of the Combe de Pierre Fendue, and then, striking to the left across snow slopes, reached the Basse de Gerbier in 55 minutes walking from the col, and the châteaux of Rieublanc half an hour later. The ascent of the Aiguille might be much more easily effected from the Col des Sarrazins to the west.

COL DE L'HOMME (c. 3,400 mètres = 11,155 feet), *July 1.*—The same party accomplished this excursion from La Grave, of which, though it has been at least twice previously made by M. E. Turcot and Signor Martelli, no account seems to have been published. Starting from La Grave, they followed the now well-known way up the Pic Central of the Meije to the spot (called Col de l'Homme) above the Rochers de l'Aigle, where the upper snows of the Glaciers de Tabuchet and de l'Homme unite (just over 4½ hrs. walking). From this point there is a superb view of the chain of Mont Blanc, as well as of the highest ridge of the Meije. They commenced the descent of the very much crevassed Glacier de l'Homme by bearing to the right, but were gradually driven to the left, and finally reached the moraine by the remains of avalanches (2 hrs. from the col). The scenery at the head of the glacier is most magnificent. Instead of descending the moraine direct to the Romanche, they struck a sheep track on the left bank of the glacier, which led them at a great height above the valley to pastures overlooking the hamlet of Pied du Col, the bridge immediately opposite which was reached by scrambling down steep slopes of débris, in 1.40 from the glacier. La Grave was regained by the ordinary path in an hour more. This fine one-day excursion from La Grave revealed the most glaring errors in the French map as to the Glacier de l'Homme and the ridges surrounding it, especially as regards the exact position of the point 3,880 mètres (Pic Gaspard), with reference to the highest ridge of the Meije.

GRAND PIC DE LA MEIJE (3,987 mètres = 13,081 feet), *July 10.*—The same party, starting from a bivouac in the Vallon des Etançons, effected the second ascent of this peak by M. Boileau de Castelnau's route. Full particulars will appear in an early number of the Journal.

LES BANS (3,651 mètres = 11,979 feet), *July 14.*—The same party effected the first ascent of this summit, after a reconnaissance on July 6, which led them to a col immediately to the N.W. of the peak, whence the descent into Val Godemar did not appear practicable.

Starting from a bivouac in the Vallon de la Pilatte, they mounted to the Col de la Pilatte by the usual route; following the crest of the ridge eastwards, they reached the base of the peak, which was ascended after a difficult climb, mainly over snow till beyond a conspicuous rock tower in the ridge, and then by the east ridge and face over very steep rocks. The highest summit was found to be a snow-capped point, precisely in the place occupied by the figures 3,651 mètres on the map, to the south of the fine rocky peak, so conspicuous from the Glacier de la Pilatte, which, however, *nearly* equals it in height. The

view was extremely extended and interesting, including the Vallon des Bans (or Bances), the Val Godemar, and the Vallon de la Pilatte. The descent was effected by the same route, and La Bérarde regained in the evening. The ascent from the Col de la Pilatte took $2\frac{1}{2}$ hrs., and the descent the same time.

POINTE DES ETAGES (3,564 mètres = 11,693 feet), *July 16.*—The same party effected the second ascent of this peak, being unaware (until reaching the summit) of the identity of the point 3,564 mètres—the lower summit of the Montagne de Clochâtel—with the Pointe des Etages (first climbed and named on June 28, by MM. Félix Perrin and A. Salvador de Quatrefages). The ascent from the Col de la Lavey was made almost entirely by the very jagged S.W. ridge, the first party having mounted by the south face. From the summit first gained, a shattered arête leads to the higher or more northerly prong. The view was marvellous, as fine as that gained from the highest summit of the Montagne de Clochâtel, first ascended by the same party last summer. Time, actual walking—La Bérarde to near Col de la Lavey, less than $4\frac{1}{2}$ hours; from col to N. summit, $2\frac{1}{4}$ hours. Return to near col, 1.50; thence to La Bérarde, 2.20. Total, up 6.40; down 4.10.

The French map is very confused and faulty in this neighbourhood. MM. Perrin and Salvador de Quatrefages effected an easy snow pass—Col de la Lavey—from the glacier in the Combe de la Lavey at the south base of the Tête de l'Étre to the head of the Glacier du Chardon, thus opening up direct communication between La Lavey and La Bérarde. The map places the Tête de l'Étre much too far north, and ignores the glacier just mentioned, to which belongs properly the name of Glacier de l'Étre. The topography is further complicated by the fact that the snow plateau, forming the common source of the Glaciers du Chardon and de l'Étre, overlooks on one side the Vallon des Etages, so that should a passage ever be forced to the glacier at the head of that valley, either La Lavey or La Bérarde might be taken as the starting point.

COL DE LA COSTE ROUGE (c. 3,100 mètres = 10,171 feet), *July 18.*—The same party crossed this pass, the shortest and easiest between La Bérarde and Vallouise. The summit was reached in $4\frac{1}{2}$ hours from La Bérarde by the *left* bank of the torrent flowing from the Glacier de la Coste Rouge—(future travellers are advised to keep to the *right* bank)—and the easy glacier itself. The view was comparatively limited. A steep snow couloir led down to the Glacier Noir in 25 minutes, and the Refuge Césanne was gained in 2 hours more.

Until M. Boileau de Castelnaud crossed this pass, August 1, 1877, it was unknown to travellers, though used by the natives as an easy substitute for the Col de la Temple. It is said that for twenty years a former curé of Les Claux, in the Vallouise, was in the habit of crossing this pass every Saturday in order to say mass at La Bérarde.

VARIATION OF THE COL DE SEGURET FORAN (c. 3,300 mètres = 10,827 feet), *July 19.*—The same party, starting from the Refuge Césanne, descended as far as the bridge over the stream, and then mounting an extremely fatiguing couloir, composed of yielding débris and pebbles, reached the Glacier de Seguret Foran (over 5 hours from the Refuge) to the S.E. of the Pic du Rif (3,366 mètres). A little glacier lake was

found on the col. M. Guillemin's Col de Seguret Foran lies to the N.W. of the Pic du Rif. From the col, a cairn of unknown origin on the Pic des Fêtes (3,451 mètres) was reached in 35 minutes; and another, built by Mr. Gardiner's party a few days before on the Pic des Arcas (3,467 mètres)—the culminating point of the massif—in 10 min. more. The view was cloudless and unexpectedly extensive, as it is believed that one or two peaks of the Bernese Oberland on one side, and of the Maritime Alps on the other, were recognised. Returning to the col in 20 minutes, the party descended the glacier, *keeping very far to the right at first*, to the Lac de l'Eychouda—a miniature Märjelen See—and reached Monestier by the Col des Grangettes.

SOUTHERN AIGUILLE D'ARVE (3,514 mètres = 11,529 feet, E. M. F.), July 22.—The same party effected the first ascent of this summit. Starting from a bivouac in the Fond du Goléon, not far from the Glacier Lombard, they reached next morning the Col Lombard in less than $1\frac{1}{4}$ hours. They then mounted by débris and easy rocks to the base of that one of the two little snow couloirs on the southern face, which is seen most to the right, looking from the col; and ascending it, gained the crest of the S.E. arête of the Aiguille. Then traversing, on its north side, the little peak between the two couloirs, they crossed a rock couloir, corresponding to the left-hand couloir of the S. face, and then traversed the N.E. face (that overhanging the Vallon des Aiguilles d'Arve) for some distance without great difficulty. Several attempts to mount directly by the face were checked by rocks on which there was no sufficient handhold. Retracing their steps a short way to a point where a fault in the rocks of the overhanging upper portion of the peak (which just there were not so high or sheer as elsewhere) seemed to offer some hope, they succeeded in scaling this wall by means of a narrow cleft or breach—a hard bit of climbing, quite as bad as anything on the Meije—and then followed the fault to the S.E. arête, by which the summit was gained without difficulty, in 3.35 from the col, including a halt of 25 minutes, and some time lost in fruitless attempts to climb directly up the face. The summit is a nearly level ridge, running nearly due north and south, falling away steeply on both sides, much like the roof of a house. Large cairns were built on the two extremities of this ridge.

It was the unanimous opinion of the party that the central Aiguille was slightly, but only very slightly, higher. The view was fine, but the central Aiguille completely concealed the northern Aiguille. Descending by the same route, the whole party had passed the 'mauvais pas' in 55 minutes, and reached the summit of the righthand couloir in 25 minutes more, whence 50 minutes sufficed to regain the col., i.e. in 2.10 walking from the summit. The descent to the châlets of Rieublanc from the col occupied $1\frac{3}{4}$ hours, being effected by a snow slope, then along the crest of a long ridge of shale: a short traverse above La Saussaz to the right led to the base of the slope, at the top of which the châlets are situated, and they were reached after a fatiguing ascent in the afternoon sun. The party were received very hospitably on this, as on other occasions, by Josephine Brun, femme de Th. Guigne. This Aiguille is considered quite inaccessible by the hunters and other natives of the district.

NORTHERN SUMMIT OF NORTHERN AIGUILLE D'ARVE (c. 3,400 mètres = 11,155 feet), *July 23*.—The same party made the first ascent of the highest summit of the northern and lowest Aiguille d'Arve, having in 1873 ascended the double-pronged southern and lower summit of the same peak. Starting from the châteaux of Rieublanc they mounted by the usual way to the Col des Aiguilles d'Arve. From the col they ascended the same snow couloir as in 1873, but, arrived at the base of the double-pronged summit, they bore to the right and passed by a narrow opening at the very foot of the northern summit from the east side to a sort of elevated plateau on the west side, well seen from the châteaux, and in Mr. Whympers's splendid engraving. Then traversing to the right as far as a great overhanging rock, they climbed straight up the very steep rocks to the summit, reached in 1.20 from the Col des Aiguilles d'Arve. The view was very fine. Despite the enormous quantity of loose rocks on the summit, no trace of a cairn could be discovered, and the party feel justified in claiming to have made the first ascent of this peak. A very large cairn was erected. The two stone-men built on the double-pronged summit in 1873, and that built on the central Aiguille in 1874, were very well seen. The descent was effected by the same route in 1½ hours to the col, the highest rocks requiring great caution and being especially difficult for the last man. The party then returned to Rieublanc.

PAS DU GROS GRENIER (c. 2,900 mètres = 9,515 feet), *July 24*.—The same party, starting from Rieublanc, crossed the Basse de Gerbier to the Combe de Pierre Fendue, and then, circling round its head, reached a point slightly higher than the true 'pas,' by steep but easy rocks, in 2½ hours from Rieublanc. They descended stony grass slopes, then by the snow which still covered the stream, reached the Granges du Pémian in 55 minutes from the col, and Valloire by Pravorsin and Le Clos in an hour more, descending to St. Michel the same afternoon. This pass, as well as the Col des Masses, more to the north, and the secondary range which they traverse, had been hitherto completely overlooked by travellers.

PIC DU THABOR (3,205 mètres = 10,516 feet), **COL DU THABOR** (c. 3,100 mètres = 10,171 feet), *August 18*.—The same party, starting from the Granges de Valétroite (which they had reached from Monestier by the Col de Buffère, Névache, and the Col de l'Étroit du Vallon), reached the chapel on the Mont Thabor (3,181 mètres = 10,437 feet), by the usual route, in 3½ hours. The view was quite clear and very extended. Descending to the glacier they then reached the col between the Mont Thabor and the Pic du Thabor, whence the ascent of the latter point was effected in 20 minutes by a rocky couloir and shattered rocks. The peak is said to be considered difficult of access by hunters,* but is really quite easy. A cairn was built on the summit, there being no traces of man to be found there. The view was nearly the same as from the Mont Thabor. Returning to a point slightly above the true Col du Thabor, the party then reached a lake at the head of the Valmeinier, by a gully filled with yielding débris and a rocky slope, in 35

* *Annuaire du Club Alpin français*, iii. 260.

minutes from the col. The highest châteaux, La Barnette, were reached in an hour more; thence, keeping always to the right bank save for 20 minutes, the hamlet of Valmeinier was gained in less than two hours, and St. Michel, by a very steep and stony path, in 1.05 more, or in all 4.40, walking from the Col du Thabor.

The chapel of Notre-Dame de Bon Secours, on the Mont Thabor (where mass is said annually by the Curé of Mellezel, on August 24 and the Sunday next following), is situated wholly in Italy. The great 'pyramide' or 'signal' on the same summit, the Col du Thabor and the Pic du Thabor, are situated wholly in France. The French map is not quite accurate; the glacier, very narrow at its head between the Mont and the Pic du Thabor, widens out farther down, and scarcely presents a single crevasse. As far as it was possible to see, the glacier does not extend to the north of the Pic du Thabor.

'Apparently this is the first time that the Col du Thabor has been crossed or the Pic du Thabor ascended, at least by a traveller; and even the Mont Thabor has been much neglected, the sole ascent by a member of the Club known to me being that by Mr. C. Oakley, on August 9, 1864, from Valloire by the head of the Valmeinier, the descent being effected to Valétroite and Bardonnèche.'

W. A. B. C.

Tarentaise District.

MONT POURRI OR MONT THURIAZ (3,788 mètres = 12,428 feet), August 8.—Mr. Coolidge, with Christian Almer and his second son Christian, starting from the highest châlet on the Montagne d'Entre-deux-nants above Peisey (which they had reached the day before in 7 hours from Tignes by the Col de la Sachette and the châteaux of la Sevolière), ascended the Mont Pourri in 4.50, walking by Mr. Mathews' route. They then effected a new and direct descent. When about half-way across the great snow amphitheatre at the head of the Glacier des Roches of the Sardinian map (20 minutes from the summit), they struck straight down the glacier on the left, and following it to its extremity, encountering no ice difficulties whatever, gained the grass slopes in 25 minutes. Thence descending somewhat and then traversing to the right, they passed just above the châteaux of la Sevolière in 20 minutes, and in 45 minutes more returned to their starting point, by traversing a grass col to N.E. of the summit, called Les Lanchettes on the French map—in all 1.50 walking from the summit of the Pourri. The Sevolière châteaux are tenanted by Swiss herdsmen, who are very willing to receive strangers. This route is incomparably more direct than the very circuitous way usually followed, and, it is hoped, will in future be frequently taken. It may be noted for the benefit of those who adopt Mr. Mathews' route, that from the first col (Col du Pourri) it is best *not* to descend to the Glacier de Thuriaz and then to mount a long snow-slope to the second col, but to follow the ridge of the first col, which leads to gentle snow-slopes at the very base of the second col; of the two apparent cols, that to the left or just at the base of the Aiguille du Saint-Esprit is the proper one; but it is perhaps easier, owing to the crevasses, to mount to that on the right and then walk

along the ridge to the other. (This latter route was taken by the above party on the ascent in ignorance of the exact lie of the ground on the other side.) Some easy shattered rocks lead in a few minutes to the snow amphitheatre at the head of the Glacier des Roches.

AIGUILLE DU MIDI DE PEISEY (3,420 mètres = 11,221 feet, E. M. F.), or MONT BERNIER (11,227 feet, A. C. map), August 9.—The same party effected the first ascent by travellers of this peak. Descending from Entre-deux-nants to the Mines de Peisey in 1.20, they mounted in 1½ hours by a path rough at first, then leading through woods, to the Châlets de l'Arc, whence an extremely fine view of the Mont Blanc chain was gained. Thence ascending over grass slopes, débris, rocks and snow, they gained in 2¾ hours more the crest of the highest ridge just to the east of the peak, marked 3,001 on the French map. Mounting over snow, and then by the easy rocky west arête, they gained the summit in 1½ hours more, or in all 5½ hours, walking from the mines. A large cairn, probably erected by the French engineers, but containing no names, was found. At Entre-deux-nants, the peak was believed to be inaccessible, and mention made of the unsuccessful attempt of an English (?) party to reach it about eight years before. At Le Bois, the party were assured that no traveller had yet made the ascent. No trace of the peak close by, marked 3,422 mètres in the French map, could be found; the cairn stands on the highest point of the massif. The view was exceedingly fine and unexpectedly extended, reaching from the Diablerets to Dauphiné. The Mont Blanc chain was seen to great advantage, but the Mont Pourri was completely crushed by it. Returning to the point near the peak 3,001, already mentioned, they descended the easy Glacier de la Thiaupé or de la Thiopaz, reaching the grass in 35 minutes from the summit. They then made an attempt to traverse the slopes to the left, in order to gain the head of the Val de Prémou; but, after reaching the spot called 'Froide Fontaine,' S.E. of the point 2,523, they turned back to the right, and gained in 2.20 hours from the glacier by the right bank of the torrent of La Gurre the hamlet of Le Bois in the Val de Prémou, which commands a grand view of the Grande Casse and the Grande Motte. They were hospitably received and entertained as well as the scanty means would allow, at the lower group of houses, by M. Landre Ruffier, the Mayor of the Commune of Champagny. Future travellers are advised to climb the peak by the Glacier de la Thiaupé on the south side of the Col de Frette, on their way over that pass, as the direct ascent from the Mines de Peisey is very long and fatiguing. It might perhaps be possible to descend by the Glacier du Cul du Nant to the route of the Col du Plan Sery and the head of the Val de Prémou; but the want of time prevented the party from trying this route. There is some confusion as to the name of the highest point of the massif. The French map names the peak 3,420 mètres 'Sommet de Bellecôte,' and that of 3,360 mètres 'Aiguille du Midi,' but that of 3,422 mètres is left without any appellation. The Alpine Club map (on what authority?) calls the highest peak 'Mont Bernier,' marking also a lower summit as the 'Mont Blanc de Peisey' (probably the 'Mont Aliet' of the French map). The Sardinian map indicates the 'Aiguille du Midi'

as the eastern extremity of the massif, making the Mont Allet a lower buttress. At Entre-deux-nants, the highest point was known as the 'Femme du Midi;' and at Le Bois as the 'Aiguille du Midi.' In the confused state of the nomenclature of the group, it has been thought best to keep to local usage, as the safest guide.

COL DE LAROSSOR (Sardinian map) or DE LA ROCHEURE (French map), (c. 3,000 mètres = 9,843 feet), August 23.—The same party traversed this pass, which, though used by the natives, has remained hitherto unknown to travellers.

Starting from the châteaux of Entre-deux-Eaux on the path to Col de la Vanoise, they kept along the right bank of the Larossor torrent, crossing to the left bank opposite the Chapelle de Saint Jacques and returning to the right bank opposite the châteaux de Larossor, the highest in the valley, reached in 1.25 from the starting point. The Vallon de Larossor is celebrated as containing the finest pastures in the Tarentaise. Keeping always on the right bank, they mounted the valley for some distance to some conspicuous whitish rocks, climbing up which and ascending over débris the crest of the ridge was reached in 2¼ hours from the châteaux. The ridge is passable at any point; the party crossed it just to the left of a blunt peak, between the 'Quercées de Tignes' and the 'Pointe du Pisset' of the French map, but nearer the former. The view was cloudy, but did not seem to include more than the Mont Blanc chain, the Pourri, the Sassièrè, the Sainte Hélène, the Dent Parrachée, and the Glacier de la Vanoise. In fine weather it would be easy to combine the ascent of the Pointe de la Sana to the west (3,450 mètres), which, according to M. Puiseux, commands a very fine panoramic view, with the passage of the col. The descent was commenced by traversing a glacier for five minutes, and then lay over débris and grass slopes, where several chamois were seen. Instead of descending by the path on the left bank of the Charvet torrent, marked on the map, the party traversed the grass slopes high above the right bank, and descended to it opposite its junction with a tributary from the west. Crossing the stream to the path they followed it to Le Gorrey, where they crossed to the right bank, reaching the village of La Val de Tignes in 2 hours 20 minutes from the Col, or 6 hours walking from Entre-deux-Eaux.

This pass, barely mentioned in the guide books (Ball, 'S. W. Alps,' 121; Joanne, 'Jura et Alpes françaises,' 514), is slightly longer than the Col de la Leisse; it is not so interesting as that pass, and the view from the Grande Motte far surpasses that from the Pointe de la Sana, but it is useful as a variation on the ordinary route and for those who have already crossed the Col de la Leisse.

Graian Alps.

CIAMARELLA.—FIRST ASCENT FROM THE COL DE SÉA, August 5.—Mr. G. Yeld, with Alphonse Payot of Chamonix and J. J. Blanc, dit le Greffier, of Bonneval, made this expedition. After reaching a second col nearer the Ciamarella than the Col de Séa, and crossing some steep snow-slopes with a patch of rocks in the middle, they struck the arête

of the Ciamarella, which runs towards the Albaron, a little to the left of the point called Pointe de Chalanson, and reached the summit by way of the arête in 3 hrs. 45 min. (including halts) from the Col de Séa. They found the snow very heavy.

COL DU GRAND MÉAN (circa 10,550), August 7.—Messrs J. Heelis and G. Yeld, with Alphonse Payot, reached this col not before crossed, unless by chamois hunters, in 2 hrs. 5 min. from the Glacier des Eivettes. It leads from the Glacier du Grand Méan to the Glacier du Mulinet of the French Map (called Glacier de Pianghias by Mr. Nichols), and is a pleasant excursion for an off-day, the snow scenery being very fine. The col is at the end of the ridge of rocks which runs eastward from the Grand Méan.

ALBARON.—FIRST ASCENT FROM THE SIDE OF THE GLACIER DES EIVETTES, Aug. 8.—The same party, with the addition of J. J. Blanc, made this expedition. They followed the usual route to the Glacier des Eivettes, kept along the rocks on the left bank of that glacier, at a considerable height, traversed the snow-slopes under the northern arête of the Albaron, and, striking the eastern arête at a patch of rocks (at a height of about 11,600 feet), reached the summit in 8 hrs. 50 min. (including liberal halts) from Bonneval. The snow was very heavy. The descent was made to the valley of the Arc, a little below Bonneval.

POINTE DU MULINET (circa 11,580), August 10.—The same party made the first ascent by English mountaineers of this point, the highest of the Rochers du Mulinet, from Bonneval. They were assured by M. Culet that the peak had never been climbed, but found on reaching the summit that the ascent had been made from the châlets of Ecot in July, 1878, by Signor Barale with A. Castagneri of Balme. The view was magnificent.

COL DE CERRU (circa 10,450), AND POINTE DU BOUSSON (10,945), Aug. 17.—The same party, without the Greffier, but with the addition of Jean Martin of Vissoye, left the *stabilimento* at Ceresole at 3.20 A.M. They followed the route of the Col de la Galese as far as Cerru (or Serue). At the end of the valley there is a cirque of repulsive-looking rock, with a broken tower at each side; above the left tower, nearer to the Col de la Galese, there is a prominent snow-peak. They climbed up the left tower, and were going to ascend a sharp rock-peak that shows well from below; but, finding an easier route, they struck down a little, and keeping at a level along the face of the rock-wall, passed through a natural arch of rock, and reached the snow without difficulty. At 10.28 they were on the Pointe du Bousson. There was no stone-man on the top. The view was superior to that from the Levanna and the Aiguille de la Sassièrè. In their descent they joined the route of the Col de la Galese, and reached Fornet at 3.5 P.M. The time includes an hour and a half spent on the summit, besides other halts. This col can be strongly recommended as an improvement on the Col de la Galese. They took a shepherd from Cerru as porter, who walked well, and can show the way.

COL DU GRAND APPAREI (circa 10,780), August 18.—The same party, with a porter, left Laval at 3.40 A.M., and, after losing 2½ hrs. on the way, ascended the Grand Appareï by the southern arête. They

then found a way down the wall of rock which joins the southern arête of the Grand Apparei. The latter part of the descent was effected by a rock couloir liable to falling stones, and cannot therefore be recommended. Suche (the lower châlet) was reached at 4.56 P.M. The time includes more than an hour spent on the Grand Apparei, as well as other halts.

COL DE FOS (circa 10,540), August 19.—The same party left the châteaux of Suche at 7.22 A.M., and, crossing over part of the Glacier de Fos, reached the châteaux of Vaudet in 4 hrs. 5 min. The route is of the easiest character possible, and conveniently short for an off-day.

SAINTE HÉLÈNE, TSANTALENA, OR POINTE DE BAZEL (3,606 mètres = 11,831 feet); COL DE BASSAC SUPÉRIEUR OR DÉRÉ (c. 3,150 mètres = 10,335 feet), August 5.—Mr. Coolidge, with Christian Almer and his second son Christian, starting from Tignes, followed the usual route to the Col de Gailletta or de la Golette, as far as the Glacier de Rhème, then striking up to the right near a conspicuous rocky mass, mounted nearly to the col between the Sainte Hélène and the Granta Parey or Grand Apparei. Leaving the knapsacks at a spot reached in 4.20 from Tignes, they then ascended the Sainte Hélène by a new route up the northern face in $1\frac{1}{4}$ hours, steering first for some rocks on the arête, and then following it more or less to the top. The slope was entirely composed of snow, which greatly facilitated the ascent. A solidly built cairn was found on the summit, probably built by Mr. Nichols' party, which had made the first and only previous ascent in 1865 by the S.W. arête. The view, though partially veiled by clouds, was very interesting, as including a district as yet unknown to the party. Returning by the same route to the knapsacks in 25 minutes, they reached the Col de Gailletta in a half-hour more, traversing a spur of the Grand Apparei and then snow-slopes nearly at a level. Striking sharply to the left across easy snow-slopes below the Pointe de la Traversière, they gained in 20 minutes a snow col at the northern base of that peak, apparently that known as the Col de Bassac supérieur or déré.* From this point the Traversière, also called the Petit Mont Bassac (3,321 mètres = 10,896 feet), was ascended by the northern arête without the slightest difficulty in 20 minutes. It commands a very fine view of the Sainte Hélène and the Aiguille de la Grande Sassièrè. Having erected a gigantic cairn, they returned to the col in 10 minutes. The descent of the Glacier de Vaudet was perfectly straight forward. Quitting it in 25 minutes from the col on the right bank, they traversed a moraine and a small glacier, descending from the Mont Bassac for 25 minutes, then took to the Vaudet Glacier again for 35 minutes, and in 15 minutes more along its right bank reached the châteaux de Vaudet dessus, where, as in many places in the Tarentaise, Swiss herdsmen received the party most hospitably. The descent from the col had only taken 1.40 walking.

AIGUILLE DE LA GRANDE SASSIÈRE (3,756 mètres = 12,323 feet), August 6.—The same party made the first ascent of this peak from the Italian side. Starting from Vaudet they mounted in 1.50 entirely by

* *Guide à la vallée d'Aoste*, par Gorret et Bich, p. 396.

the slopes above the right bank of the Glacier de Vaudet to the upper basin of that glacier. They then steered towards the ridge running S.E. from the Sassièrè to the Traversièrè, gaining the crest in a little over $1\frac{3}{4}$ hours by a steep snow-slope near the second rocky shoulder or step, counting down from the Sassièrè. They then followed the crest of this ridge, exposed to a violent wind and enveloped in mist, but encountering no difficulties except a double corniche just at the base of the final peak, which was itself scaled by steep but easy rocks, the remains of the cross on the summit being gained in 1.05 from the time the S.E. arête was struck, in the midst of a fierce tourmente. The ascent had occupied $4\frac{3}{4}$ hours walking from Vaudet. The descent to Tignes by the ordinary route and the châteaux of La Revielle took but 2.20, and was perfectly easy. The time (actual walking) occupied in traversing the mountain from Vaudet to Tignes was but 7.05. The route from Vaudet, just described, might be rejoined by anyone starting from Tignes by mounting from Les Sales (or châteaux of La Sassièrè) to Mr. Nichols' Col de la Sassièrè, or to some other point on the S.E. ridge. There are plenty of practicable couloirs, suitable for this purpose.

There are at least two other routes, not yet taken, of which the one is certainly, and the other probably, practicable. The former is that pointed out by M. Cordier from the Col du Fond to the north over easy snow-slopes. The other starts from Vaudet, and would traverse the long, steep rock and ice-slopes on the east flank of the Sassièrè, joining the former route at the northern base of the peak itself.

On August 22, Messrs. Heelis and G. Yeld, with J. Martin and A. Payot, ascended the Aiguille de la Sassièrè from the Col de la Gailletta, passing over the summit of the Petit Mont Bassac, en route. They left the Châlet de la Cascade, the lower of the Sassièrè châteaux, at 3.42, and reached the summit at 10.24 (the time includes halts).

Maurienne District.

COL DE GÉBROULAZ (c. 3,470 mètres = 11,377 feet); AIGUILLE DE POLSET (3,538 mètres = 11,608 feet), *July 29.*—Mr. Coolidge, with Christian Almer and his second son Christian, starting from the châteaux of Plan Bouchet above Orelle, on the Cenis road, mounted a glen to the east, and ascending over the Glacier de la Pointe Rénod, reached the depression at its head between the point marked 3,407 mètres on the map and the Pointe Rénod in just over 2 hours from the châteaux. Descending by a steep snow-slope they reached the level of the Glacier de Chavière in 10 minutes, and then struck across it due north to the col between the Aiguille de Pécelet and the Aiguille de Polset, which was reached in $2\frac{1}{4}$ hours, after a fatiguing but perfectly easy walk. It was named Col de Gébroulaz, not having been crossed before, and was found to be very much more elevated than had been expected. Mist prevented the party from undertaking the ascent of the Aiguille de Pécelet, so ascending to the east, they reached in 16 minutes the western summit of the Aiguille de Polset, and in 20 minutes more the central and highest point—a sharp rocky pinnacle (the eastern summit is much lower, and is the snow dome seen from Pralognan and on the way to

the Col de Chavière). Cairns were built on both, as they appear to have been previously untouched, though one of them *may* be identical with the peak climbed by Mr. Mathews from the Col de Chavière.* Returning to the col in 15 minutes, the party then descended the Glacier de Gébroulaz without difficulty, save at the base of the Aiguille de Pécelet, where there were some troublesome séracs. In less than 2¼ hours they quitted it at its northern extremity, and in 30 minutes more reached the châtelets de Gébroulaz (not marked on any map), where they were hospitably received by some Swiss herdsmen. From the châtelets there is a fine view of the lower summit of the Aiguille de Pécelet. The next day the party descended in 25 minutes to the châlet du Saut, and reached the châtelets of Planes 40 minutes above Pralognan, on the Chavière path, in 4.40 hours walking, by the Col de Chanrouge and the Col de la Petite Val, just north of the Mont Blanc de Pralognan, enjoying very fine views of the Grande Casse and the Glacier de la Vanoise.

AIGUILLE DE PÉCELET (3,566 mètres = 11,700 feet); COL DU BOUCHET (c. 3,030 mètres = 9,941 feet), August 12.—The same party, starting from the châtelets of La Motte, 2 hours from Pralognan on the Chavière path, passing by the Lac Blanc, gained the east branch of the Glacier de Gébroulaz (which is, properly speaking, almost an independent glacier), between the points, 2,728 mètres and 3,047 mètres, in 2¼ hours walking, and the Col de Gébroulaz in 1.40 more. Descending a few steps to the south, the party struck to the right or west, and in 15 minutes reached the base of the south face of the Aiguille de Pécelet, which is much less imposing from this side than from the Glacier de Gébroulaz. In 15 minutes they gained by slopes of débris and loose rocks the crest of the S.E. arête, and in 15 minutes more a point to the south of and slightly higher (5 to 10 mètres, according to the readings of aneroid barometer) than the point reached by M. Puiseux in 1877. This is the true summit of the Aiguille and the culminating point of the massif. Having built a large cairn in honour of the first ascent, the party descended into a deep depression by easy snow-slopes (the upper part of the Glacier de Pécelet), and gained M. Puiseux's point in 10 minutes from the other point. The small heap of stones found there was somewhat enlarged, and they then returned to the true summit. The distant view was cloudy, but the whole of the Pécelet massif was perfectly clear and was carefully studied. Returning to the glacier at the south base of the Aiguille in 15 minutes, the party then struck to the south-west, descended the Glacier de Thorens for a short distance, and, keeping nearly at a level, reached in 45 minutes from the base of the Aiguille a depression (which it is proposed to name Col du Bouchet), just to the east of the peak marked 3,056 mètres on the French map, whence some of the Dauphiné summits were visible. The Col de la Montée du Fond lies a short distance to the west of the peak 3,056 mètres. Descending by débris to the Glacier du Bouchet, and walking very fast, the party quitted the glacier at its extremity in 15 minutes from the col; in 35 minutes more they reached the châtelets of Plan Bouchet, Bonvillard in 1¼ hours, and

* *Peaks, Passes, and Glaciers*, 2nd series, vol. ii. p. 401.

Francoz (near Orelle) in 25 minutes more, whence a dusty walk along the high road led them in 1.20 to S. Michel, after a very long, but extremely interesting expedition.

The Péclet massif has been hitherto strangely overlooked. The only expeditions made there, previous to those just described, are :— Ascent of a rocky peak of 11,467 feet from the Col de Chavière in 1861, by Mr. W. Mathews; * excursion on the Glacier de Gébroulaz and passage of the Col de Corneilla, both in unfavourable weather, by the Rev. C. H. Pilkington, August 21–22, 1865; † passages of the Col de Péclet or de la Chambre, and of the Col de la Montée du Fond, by Miss Brevoort and Mr. Coolidge, July 5, 1874; ‡ and the ascent of a point of the Aiguille de Péclet, by MM. Puiseux and Boutan, on August 22, 1877.§

The Sardinian map is, as usual, confused and faulty in its delineation of the glaciers; but the French map leaves but little to be wished for in point of accuracy and fulness of detail.

DENT PARRACHÉE (3,712 mètres = 12,179 feet), August 21.—The same party, starting from the châteaux of Fournache (about three hours above Aussois, or five hours from Modane), reached Mr. Blanford's Col de l'Arpont in 2.20, and thence ascended the Dent Parrachée in 1.40, the final snow corniche requiring much step-cutting. The route taken was entirely along the S.W. arête (save at one point near the col, where a great tower of rock had to be turned), and seems to be in part new, as both Mr. Blanford's (1864) and Signor Costa's (1876) parties seem to have descended some way on the north side of the col, and to have then remounted to the arête. There is not the slightest difficulty in the new route. The view was of unparalleled magnificence, including every considerable peak in the Cottian, Dauphiné, Graian, Tarentaise, and Pennine Alps, besides the plains of Italy not far from Turin, and a long reach of the valley of the Arc. The stone-man found by Mr. Blanford's party was probably built by the French engineers, and is only 80 or 90 feet below the summit. Returning to the col in just over an hour, the party descended by débris and rocks to the Glacier de la Dent Parrachée in 20 minutes, descended the glacier some way, then traversed a grassy spur to the Glacier de l'Arpont, and keeping to the right (future travellers are advised to keep far to the *left*), descended steep rocks to the Granges de l'Arpont, reached in 2¼ hours from the Col de l'Arpont.

Mont l'anc District.

AIGUILLE DU DRU.—On Wednesday, Sept. 11, Messrs. C. T. Dent and J. Walker Hartley, with the guides Alexander Burgener of Stalden, and K. Maurer of Meiringen, slept out at a bivouac high up on the rocks close to the base of the Glacier de la Charpoua. Starting the next morning at 4 A.M., they reached the highest point of the Aiguille du Dru at 12.30 P.M. The route followed led by way of the depression between the Aiguille du Dru and the Aiguille Verte, and thence by the S.E. face

* *Peaks, Passes, and Glaciers*, 2nd series, vol. ii. p. 401.

† *Alpine Journal*, vol. ii. pp. 315–316. ‡ *Ibid.* vol. vii. p. 150.

§ *Annuaire du C. A. F.*, 1878, vol. iv. pp. 154–164.

of the higher E. peak of the Dru to the arête. The descent was difficult, though the rocks were in good order. Overtaken by night they did not reach their bivouac till 2 A.M. the next morning, the descent of the glacier being effected by moonlight. The actual summit (visible from Chamonix) is at least eighty or a hundred feet above the lower peak.

MONT MAUDIT.—Having passed the previous night at the Grands Mulets, Messrs. H. Seymour Hoare and W. E. Davidson, with Johann Jaun and Johann von Bergen, left at 1.50 A.M. on the morning of September 12, to attempt the ascent of Mont Maudit. Owing to their early start, they were enabled to enjoy half an hour's rest upon the Petit Plateau in a dense fog, pending the arrival of the sun. The highest point of the corridor (Col de la Brenva) was reached at 6.45, and the summit of Mont Maudit at 8.15 A.M. Immediately above the corridor great care was necessary, as an enormous cornice overhung the Brenva glacier; but the ascent of the final peak presented no particular difficulties. The view from the summit was indescribably magnificent, and it is probable that from no point can the whole range of Mont Blanc be seen to so great advantage. Descending to the corridor, the party ascended Mont Blanc by the Mur de la Côte, step-cutting being continuous from the foot of the Mur to the summit.

The Grands Mulets were regained at 2.30; left, after 1½ hrs. halt, at 3.45, and Chamonix reached at 5.30 P.M.

‘It may be noticed that nearly all the best maps of this range, following a misprint in the French Ordnance Map, give the height of Mont Maudit as considerably over 15,000 feet. This error is corrected by M. Charles Durier, in his recent work upon Mont Blanc, where the height is rightly given as about 14,670 feet. We have convinced ourselves, after careful enquiry, that the mention of an ascent in the “Alpine Guide” is erroneous.’

MONT BLANC.—Having spent the previous night at the Grands Mulets, W. E. Davidson, with Laurent Lanier and Johann Jaun, left at 3.15 A.M. on September 6, and reached the top of Mont Blanc at a little after 9 o'clock. They left the summit at 10.10 A.M. and descended to the Glacier de Miage by Mr. Kennedy's route, arriving at the cabane on the Aiguille Grise at 2.30 P.M.

This is the *first* time that Mont Blanc has been crossed from *Chamonix* to *Courmayeur*, although it may be remembered that there has been one previous descent of the Courmayeur side of the mountain, by Signor Gamba, in 1873.

‘We found the actual descent of the rocks less difficult than we had expected, but we were a good deal troubled about an hour before we reached the cabane by falling stones from the rocks above. Some of these came unpleasantly near to us, and formed the only drawback to a magnificent expedition, which, with fine weather and good guides (both of which are indispensable), will not, I think, be found to offer any other serious difficulty. Our experiences during an unsuccessful attempt upon the mountain in 1877 made us anxious to find a safer line of descent from the cabane than that which is ordinarily followed, and it was moreover almost impossible, owing to the alteration of the glacier, to get on to the ice at the usual place. By following a rocky channel

filled with stones and débris which runs down by the side of the glacier for some distance, we succeeded in gaining the ice at a point very much lower down, and not more than ten minutes distant from the main stream of the Miage. The same route had evidently been followed by some previous party in ascending, as we found steps upon the glacier. It is a decided improvement upon the upper route, but I am not at all sure that it will be found possible in future years, as the glacier appears to be rapidly shrinking away from the rock.'

Pennine Alps.

THE GRAND COMBIN.—'On Tuesday, Aug. 27, I left Bourg S. Pierre, with Ulrich Almer and a local porter, for the Grand Combin by the Sonadon route. Avoiding the Sonadon Glacier, we kept to the left of the well-marked rock buttress which lies south-west of the summit, and, after ascending snow-slopes, reached a high snow col, conspicuous from their base. Our route then joined that usually taken from the Sonadon side. The weather was wretched. We descended on to the huge basin of névé between the Col de la Maison Blanche, and the Corbassière Glacier, which we followed until it passes 'les herbes de Pannossière,' when we quitted the ice, and, having crossed a low col between the Corbassière and Otanes Glaciers, went down the latter to some rocks leading into the Val de Bagnes.' F. T. WETHERED.

GRAND CORNIER FROM THE NORTH.*—On August 6, the Rev. F. T. Wethered, with Ulrich Almer and Franz Andermatten, a young Saas guide, ascended the Grand Cornier from Zinal *viâ* the summit of the Bouquetin, descending by the Col de l'Allée on to the Allée Alp, above the head of the Val d'Anniviers. The weather being bad, their time was correspondingly slow; nearly 11 hrs. in the ascent.

'Keeping near the edge of the rock cliffs which descend precipitously from the upper névé of the Moiré Glacier to the Glacier Durand, we diverged to the left on approaching the snow-slope which leads to the rock arête connecting the summit of the Grand Cornier with the Pointe de Bricolla. The rocks, on our striking the arête, were easy; soon, however, they became so jagged as to be quite impracticable, and we were driven over to their southern face. This was very bad to climb, on account of snow, and our passage transversely up the rocks was extremely difficult. On striking the arête once more our troubles were over, and we were rewarded in a very few minutes by a sight of Mr. Whymper's card, dated June 16, 1865, together with two other entries in the bottle on the top.' A Swiss climber (Mons. O. Bornand) ascended the peak, in 1873, from the same direction. F. T. WETHERED.

AIGUILLE DE LA ZA.—On August 31, Mr. J. C. Leman, accompanied by the guides Frederic Payot and Adolphe Folignet (both of Chamonix), in ascending the Aiguille de la Za from Arolla, took a new route to the base of the peak. Instead of ascending by the Glacier de Bertol, the ascent was made by the glacier which fills the head of the valley lying next (on the Arolla side) to the valley of the Glacier de

* Vide *Scrambles in the Alps*, p. 268.

Bertol. This glacier is unnamed on Dufour's map, but on the local map of the Swiss Alpine Club, dated 1866, it is called the Glacier des Doves Blanches, and by Mr. Cust, in his panoramic sketch, the frontispiece to the 8th vol. of the 'Alpine Journal,' Glacier de Dauva Blantz. It lies high on the Arolla side of the ridge of the Grandes Dents, and the ridge was crossed by ascending the glacier to the foot of an arête of rocks at its northernmost end, by which arête an easy ascent is made to a depression just below the northernmost summit of the ridge, the point of junction with the rocks lying above the Glacier de la Za, which on Mr. Cust's sketch (p. 15 of the 8th vol. of the 'Alpine Journal') is marked summit No. 1. The descent thence to the névé of the Mont Miné and Bertol Glaciers is easily effected, and a short circuit round the base of the rocks leads to the foot of the Aiguille by a line at a much higher level, as well as much shorter, than that from the Bertol Glacier. The ascent, on the 31st, to the glacier was made by the valley into which it descends towards the Arolla Glacier, but the same party on the next day reached the glacier directly from Arolla, by ascending the slopes of the mountain in as straight a line as possible to the summit of the moraine, which so conspicuously crosses the mountain side, and then turning to the right along the ridge of the moraine, and following this until it reaches the rocks bounding the Glacier de Dauva Blantz. They erected there a stone-man, which now marks the point to aim at. By this route the dangers of the couloir, hitherto used as a direct route in the ascent of the Aiguille, are avoided, as there is no risk to be apprehended from falling stones, and the summit of the Aiguille may be reached by it in less than $5\frac{1}{2}$ hours, even if the longer course be taken. The views are very fine, that of the Aiguille from the Glacier de Dauva Blantz being extremely grand, and the view from the ridge of the Grandes Dents being scarcely inferior to that from the Aiguille itself.

The col over the Grandes Dents, which should be named Col de Dauva Blantz, will not be of much use as a route to Zermatt, as it would involve a considerable descent and reascent to reach the line of the Col d'Hérens, but it is a very direct way from Arolla to the glacier of Mont Miné and to Ferpècle.

J. C. L.

Monte Rosa District.

OBER GABELHORN (13,863 feet), *September 3.*—Mr. Coolidge, with Christian Almer and his son Christian, having reached the summit of this peak by the N.E. arête from Zermatt, and having encountered very serious difficulties in mounting from the point where the ridge was struck (at the base of the *lowest* rocks on the arête) to the summit, owing to the quantity of snow on the rocks, avoided these difficulties on their return by a slight détour, the knowledge of which may be useful to others, whenever the arête is in as bad a condition as it was this summer. From the summit they struck straight down the northern face, composed of hard snow, nearly as far as a snowy shoulder; and then traversed to the right the very steep, snowy slopes (overlooking the Triftjoch) to the base of the rocks on the N.E. arête. This détour occupied $1\frac{1}{2}$ hours, steps having to be cut the entire distance, and was far less dangerous than the descent of the

N.E. arête itself would have been. It is believed that this variation has not been made before.

ZINAL ROTHORN BY THE W. FACE.—On August 13 Messrs. Conway, Penhall, and Scriven, with the guides Ferdinand Imseng, P. J. Truffer, and M. Truffer, gained the summit of the Rothorn by a new route. Leaving the Mountet but they reached the glacier in half an hour; in $1\frac{1}{2}$ hours they crossed the bergschrund at the foot of the final slope of the mountain, at a point below, though somewhat to the right of, the summit. The snow-slope lasted for half an hour longer, and then the ascent was completed by a fairly well-marked rib of rock which leads to a point on the final arête about 20 minutes from the top on the Zermatt side. The ascent from the bergschrund to the summit took $2\frac{1}{2}$ hours. The rocks were in places very hard. The quantity of snow at this time on the mountain rendered the Zinal arête impossible. Hence this route may at times be useful when the ordinary Zinal route cannot be followed. It affords an interesting climb, though probably not nearly so fine a one as the old arête. The descent was made to Zermatt. Time, Mountet to Zermatt $10\frac{1}{2}$ hours, the snow being in very bad condition on the east side.

MONTE ROSA.—On August 17 Mr. W. M. Conway, with Ferdinand Imseng, left Zermatt at 1 A.M. Ascending by the ordinary Monte Rosa route, they reached a point just below the 'Felsen' in 4 hours from Zermatt. Thence they followed the Lys Joch route for about half an hour, and then bore to the left up a side glacier, among great schrunds and séracs, till some rocks were reached. These rocks are conspicuous from the Gorner Grat as forming the end of the great snow buttress that abuts against the mass of the mountain at a point somewhat below the 'saddle.' The ascent of these rocks took half an hour; the back of the buttress was traversed in half an hour, and was followed by a rock climb and short snow-slope which together occupied 20 minutes. By these means the little snow plateau just below the saddle was gained, and the ordinary route joined. This route, which is a slight variation on that mentioned on p. 157 of vol. iv. of the Journal, deserves to be brought again into notice. It substitutes an agreeable and varied climb for the tedious monotony of the snow fields of the Monte Rosa Glacier; by it in bad weather all danger of losing the way is avoided. In the descent it affords some very good glissades. It is no longer than the old route in point of time, and nothing on it is more difficult than the final arête of the mountain.

On August 10, Messrs. Penhall and Scriven, with Ferdinand Imseng and Peter J. Truffer, combined the Nord End and Allershöchste Spitze in a single expedition. They followed the usual Monte Rosa route to a point 20 min. above 'Auf den Felsen,' and turning off to the left took to the rocks of the Nord End. Descending to the Silber Sattel, they climbed thence in an hour to the Ost Spitze up a rock gully, rendered difficult by fresh snow and ice, and traversed the arête to the Allershöchste Spitze.

An hour and a half was occupied chiefly in step-cutting from the Nord End to the Silber Sattel, and the whole expedition from the Riffel and back took $15\frac{3}{4}$ hrs.

On the same day the Rev. F. T. Wethered, with Ulrich Almer and a young Saas man, Franz Andermatten, as guides, after having ascended the Nord End by the rocks, but by a different route from Messrs. Penhall and Scriven, followed them to the Silber Sattel, and arrived at the top of the Allerhöchste Spitze with them.

Mr. Wethered writes:—‘The route, in direct line from the summit of the Nord End to the Allerhöchste Spitze, had all of it been traversed in fragments, and in 1848 the northern rocks of Monte Rosa were ascended to the Ost Spitze, from the Silber Sattel, by Professor Ulrich’s guides. The brothers Adolf and Hermann Schlagintweit again ascended them to the same point in 1851, but both parties, for reasons which I for one am at a loss to understand, declined to face the arête connecting the Ost with the Allerhöchste Spitze. This portion of the route was left to Messrs. Taylor and Pendlebury to complete, in their ascent from Macugnaga, in 1872, by which it was proved that the gap between the two peaks was not so ‘impassable’ as it had appeared to early mountaineers.* Although we all reached the Allerhöchste Spitze at the same moment, the expedition was conceived and carried out entirely independently by the two parties.’

THE LYSKAMM.—On September 1, Mr. Percy W. Thomas, with Joseph Imboden and J. Langen, left the new inn on the Col d’Ollen at 1.35 A.M., having in view the passage of the Lysjoch to Zermatt. The weather, however, was so beautifully fine that they were encouraged to put in practice a scheme long cherished by Imboden, which had for its object the ascent of the Lyskamm by the rocks leading up to the S.E. arête, to the left of, but not very far from, the scene of the accident of last year. The attempt succeeded so completely that the summit was reached without a check at 10.50, or in a little under three hours from the foot of the mountain. The ascent was made almost in a straight line up the rocks to the S.E. arête, which was then pretty closely followed to the point where it joins the Lysjoch arête. By this means, only some couple of hundred yards of the latter had to be traversed. The descent was made by the same route. The party then crossed the Lysjoch and arrived at Zermatt at 7.20 the same evening. This route would appear to possess attractions superior to any former one. The really interesting climb by the rocks, though not always particularly easy, did not at any time present any extraordinary difficulty, and has the merit of being free from danger. There is a hut on the moraine of the Lys glacier from whence this ascent might be made in future in from five to six hours. Messrs. Mathews and Morshead reached the same S.E. ridge from the opposite or Felik Joch side in 1867.†

TÄSCHHORN FROM THE DOM JOCH.—On Monday, September 2, Messrs. Frederick Cullinan and Gerald Fitzgerald, with Peter Knübel and Joseph Moser as guides, ascended the Täschhorn by the arête leading from the Dom Joch to the summit. Starting from the usual sleeping place for the Täschhorn (about three hours above Randa), they reached

* See *Alpine Guide*.

† *Alpine Journal*, vol. iv. p. 55.

the Dom Joch in six hours and twenty minutes, including a halt for daylight of three-quarters of an hour. They then followed the northern arête of the Täscherhorn, and gained the summit in two hours and ten minutes from the Dom Joch. The arête was found to be difficult from its extreme narrowness, but, on the other hand, the rocks composing it, although very steep, were sound. It reminded the party very much of the Zinal arête of the Rothhorn. In several places along it, a small and treacherous-looking snow cornice overhung the Saas side of the mountain, and had to be carefully avoided. The weather was perfect, and the views on each side from the arête were superb. The descent was made by the ordinary route, which was found by the party to be much easier, but by no means so interesting as the way followed in the ascent.

DOM FROM DOMJOCH.—On August 19, Messrs. Conway and Penhall, with Ferd. Imseug and P. J. Truffer, made the above ascent for the first time. They slept at the usual Täscherhorn sleeping place. The bergschrund, at the foot of the final wall below the Domjoch, was reached in 8 hours from the sleeping place. Thence $2\frac{1}{2}$ hours were occupied in ascending rock gullies, couloirs, rocks, and snow-slopes, to a point on the S. arête of the Dom slightly N. of the true col. From this point the arête was followed for $3\frac{1}{2}$ hours in a thick mist, with snow falling and a gale of wind, to the summit. The arête is much broken by rocky teeth. At no point could either face be taken to for more than a yard or two. There were three points of exceeding difficulty, and nowhere was the ascent easy. The rocks were covered by the powdery snow in many places; and this, as well as the blinding snow which was whisked about by the wind and made it impossible to keep the eyes open or to wear spectacles, rendered the ascent more apparently difficult than it might be found in fine weather. The descent was made by the old arête route to the Festi glacier, and thence to Randa. Time, from Randa and back, 18 hours walking.

THE DOM.—On September 4, Mrs. E. P. Jackson, with A. Pollinger, P. J. Truffer, and J. M. Biener, and Mr. Percy W. Thomas, with J. Imboden and J. Langen, ascended the Dom by a route that does not appear to have been previously adopted. Leaving the Täscherhorn gîte at 3.20 A.M., they followed the Domjoch route as far as the névé above the ice-fall of the Kien glacier. Here they branched off, and by climbing some easy rocks to the left, arrived at the arête on the extreme right of the mountain, where they found themselves separated from the ordinary route by the very steep snow-slope on the face. The snow being in admirable condition, they were enabled to cross this in almost a direct line from right to left, arriving at a point from whence the summit was reached in three-quarters of an hour by the ordinary route at 9.35. The descent was made to Randa, where the party arrived at 3.15 P.M.: the whole expedition thus occupying a little less than twelve hours, inclusive of all halts.

BALFERINHORN.—On July 13 a party consisting of Mr. W. M. Conway, with the guides Pollinger and Truffer, ascended the Balferinhorn by a route which does not seem to have been previously recorded. Starting from St. Nicolas, the Ried Pass route was followed for six

hours to a point on the right bank of the Ried glacier, from which the Balferinhorn becomes first visible. From this point the way lay for one hour over the snow field, and then for half an hour up some fairly steep rocks to a col to the left of the peak. A broad snow arête leads thence in half an hour to the top. The descent was made to the top of the Ried Pass, and it was found that by this route a saving of time is effected in the passage of the pass, the peak and the pass combined being shorter than the pass alone, as all sérac work is avoided. In the descent from the Ried Pass to Saas, a way was taken straight down the rocks, avoiding the usual détour to the left. This route has been probably taken before, but does not appear to have been recorded.

ALLALEINHORN.—‘On July 23, accompanied by Ulrich Almer and a Zermatt porter, I left a camp on the upper plateau of the Täsch Alp at 3.40 A.M., and, proceeding by the usual route, reached the summit of the Allaleinhorn at 9.10 A.M. In climbing the rocks, we had to pass under a large and very threatening snow cornice, which overhung a portion of the route; not caring to pass under it a second time, we decided to attempt the descent by a new route. Leaving the summit at 9.15 A.M., we descended in 30 min. by easy snow and one short ice slope to a col between the mountain and a peak without name, marked 3,812 m. on the Swiss map, and thence by very steep and difficult rocks down to the Mellichen glacier, the upper snow of which was reached at 11 A.M., or 1½ hrs. from the summit. The portion of the route between the col and the summit has, I think, been traversed before by a party ascending the mountain from Saas; in the state the mountain was in on the day of our ascent, I consider the line of our descent both shorter and safer than the old route: the rocks are far more difficult, but there is no danger from overhanging snow.’

W. W. SIMPSON.

THE ALPHUBELHORN.—Messrs. Worsley, Orde, and G. Foster left Zermatt at 1.30 A.M. on July 20, reached the summit of the Mischabeljoch at 9, and ascended the arête from it to the Alphubelhorn. Leaving the summit at 12, they descended to the Alphubeljoch, by which they returned to Zermatt.

‘The descent of the peak to the Alphubeljoch was only effected by cutting down a very steep ice wall, which required the use of 140 feet of rope, which we fortunately had with us. A party, two days later, with Ulrich Almer as guide, were compelled to return, as their rope was too short. They found the descent of the arête to the Mischabeljoch decidedly difficult; but the expedition, if repeated, is probably best taken the opposite way to that which we took.

‘The Alphubelhorn had previously been ascended from both sides; we only mention our expedition as adding one to the few possible from Zermatt in one day.’

Bernese Oberland.

BIETSCHHORN, July 24.—Messrs. C. T. Dent and O. Maund slept out by the side of the Baltschieder glacier, 8 hrs. above Visp. On the next day they climbed the Bietschhorn by the S.E. arête and face of the mountain, reaching the summit at 1.30 P.M. On the descent they were

caught in a storm, and reached Ried by the Bietsch Joch at 11 P.M. Rocks very bad on both sides. Considerable risk from avalanches.

C. D.

WETTERHORN.—On August 10 Messrs. Baumann and Vernon and Geo. S. Foster made a new ascent of the Wetterhorn. 'We left the Gleckstein at 2.30 and bore to the left of the usual route, towards the long ridge of rocks stretching from the peak nearly to the Gleckstein. These we crossed as near the main mass of the mountain as possible, a previous attempt having shown that this is the only way to reach the Hühnergutz glacier, so conspicuous on the Great Scheideck face of the mountain, without much step-cutting. The rocks are not difficult if the right point of ascent is hit off. The glacier was reached about 5 o'clock, and we crossed it till we reached a point about midway on the precipitous face seen from the Great Scheideck. Thanks to the amount of snow due to this very snowy season, we were able to ascend by step-cutting straight towards the summit for a long way. Then to avoid a ridge of rocks which nearly crossed the face, and were both "blatt und eisbedeckt," we turned sharp to the left, and reached the northern or Great Scheideck arête about a quarter of an hour below the summit, which we gained at 9.55.

'The descent was made by the usual route.

'This ascent is probably only possible when there is a great deal of snow in good order, as the rocks, when not covered, are very brittle and generally glazed with ice, and very dangerous from falling stones after the sun has reached the face. Guides, Hans Baumann, Egger, and Inäbnit. Hans Baumann's son, a young lad, also accompanied us.'

JUNGFRAU.—On August 18, Messrs. Vernon, Baumann and Gerald Fitzgerald, with Hans Baumann, Peter Egger and Christian Inäbnit as guides, ascended the Jungfrau from the Wengern Alp, by a variation in the ordinary route. Starting from the hut on the side of the Guggi glacier, they reached by the ordinary route the snowfields leading to the base of the final peak. Thence they bore considerably to the left, and reached the foot of a snow couloir, which led straight up to the small depression between the false and the true peak of the Jungfrau, about thirty yards from the latter on the *north-eastern* arête. The couloir was ascended without any difficulty, but considerable care had to be taken in passing along the few yards of the arête from the head of the couloir to the summit of the mountain. The time from the hut to the summit was 7 hrs. 55 min., and the party descended the same day to the Äggischhorn.

Leontine Alps.

BASODINE, *June 13.*—Messrs. Moore and H. Walker, with Melchior and Jakob Anderegg, after ascending this peak from the Tosa Falls, went straight down the Caverгну Glacier to Alp Zotto in 1½ hours; from the alp an excessively steep path descends into Val Bavona at a point below the waterfall from Alp Robiei, and leads to a bridge over the main stream which must be crossed to the left bank above Campo. San Carlo was reached in a little more than 3 hrs. walking from the peak. This route is a good deal more direct than the usual one by Alp Robiei,

while it is probably less difficult, and apparently not longer in point of time than that by Val Antabbia taken by Mr. Gardiner in 1877.* The glacier and slopes below were deeply covered with snow, which no doubt made the last part of the descent to the alps easier and less rough than it might be under other conditions.

Silvretta Group.

PIZ LINARD, July 15.—Messrs. C. Taylor and R. Pendlebury, with Gabriel and Josef Spechtenhauser, ascended this peak from Lavin by the face of the mountain which overlooks the Club hut. Instead of returning the same way, they descended straight down what Mr. Ball calls the formidable precipice overlooking Val Lavinuoz, and reached Lavin again after about eleven hours' absence in all, without any hurry.

Bernina Group.

PIZ ROSEG, August 13.—Mr. Benjamin Wainewright, with the two guides, Christian Grass and his son Christian Grass, of Pontresina, made the ascent of Piz Roseg, by a new route, reaching the highest peak first, and returning by the ordinary way. They passed the previous night at the new hut near the Capütschin, and leaving at 2.20 A.M., reached at 5 a point a few hundred yards from the summit of the Sella Pass, and directly below the highest peak of Piz Roseg. They began the ascent by a series of steep snow couloirs, alternating with steep and rather loose rocks, and at 8 struck the southern arête, falling from the highest peak to the Sella Pass, at a point about two-thirds of the way up, with the intention of following it to the top. This, however, proved impracticable, and they were obliged to leave it, descending a little on the E. side, which overlooks the Scerscen glacier. Here they had to cross diagonally a series of snow couloirs, where it was necessary to move with great caution, owing to the softness of the snow, and the very steep angle of the rocks on which it was resting. Then, after crossing a snowfield, a steep scramble up rocks, ending with a snow arête, brought them to the summit of the highest peak at 10.15.

They returned by the usual arête and the Schnee Kopf to the Roseg Restaurant. The ascent, exclusive of halts, took 6½ hrs. from the hut; the descent to the restaurant, 4 hrs. 20 min.

Etzthaler Ferner.

WEISS KUGEL, July 12.—Messrs. C. Taylor and R. Pendlebury, with Gabriel and Josef Spechtenhauser as guides, having ascended the Weiss Kugel from Kurzras by the ordinary route, descended the face of the mountain near the eastern ridge to the Weiss Kugel Joch, and from thence to the Langtauferer Thal. By this way Nauders was easily reached before nightfall. Though probably no single part of this way is new, the combination is so, and furnishes an agreeable route from the Schnalser Thal or the Vintschgau to the Engadine.

* *Alpine Journal*, vol. viii. p. 341.

The Dolomites.

PASSO DI VAJOLET, *August 28.*—Mr. C. C. Tucker, with François Devouassoud, made a new pass across the Rosengarten range from Welschenofen to Vigo. The way lies at first through forest, and afterwards up steep pastures to the top of a green spur projecting from the face of the Rosengarten, about half-way between the Federer Kogel (Monte Alto di Cantenazzi of the new Austrian map) and the Rothewand Spitz (Coronelle of the map). The level top of this spur is followed until it melts into the face of the mountain, when a short traverse to the right leads to the foot of a gully by which the crest of the Rosengarten is reached without difficulty. In descending it is necessary to bear a little to the left, when easy slopes lead to Val Vajolet, the finest of all the glens on the E. side of the Rosengarten, which is followed to its junction with Val Fassa. The pass, which is nearly 8,500 ft in height, and may be appropriately named the Passo di Vajolet, is perfectly easy throughout, and offers to any traveller from the Karneid Thal or the Tierser Thal to Vigo a route far superior in attractions to the Caressa Pass. The Federer Kogel is seen in its sharpest aspect from the pass, which also commands a remarkable view of the Marmolata. The peaks of Primiero are also visible from a point a little below the summit on the E. side. Time—about seven hours' easy walking from Welschenofen to Vigo.

SASSO DI MUR, *September 6.*—Messrs. R. M. Beachcroft, A. Cnst, and C. C. Tucker, with the same guide, made the first ascent of the S.W. peak of the Sasso di Mur, the highest of the dolomites of Val Asinozza. Starting from a chalet in that valley they crossed the ridge, separating it from its E. branch, which bears the name of Val Fonda. Bearing to the left over a shoulder of the rocky mass locally known as Neva, they descended into the head of Val Fonda and remounted to a saddle lying between the Neva and the S.W. peak of the Sasso di Mur. A difficult climb up the ridge of the latter brought them to the top, which is separated from the N.E. and slightly higher peak of the mountain by a deep and apparently difficult gap. The height of 2,554 mètres, given to the Sasso di Mur by the Austrian map, is probably a little below the mark. Times (exclusive of halts)—about six hours from the chalet in Val Asinozza to the top, and five hours from thence to Primiero.

ALPINE ACCIDENTS AND ADVENTURES IN 1878.

The 'Alpenpost' copies from the 'Frankfurter Zeitung' the following account of the recent accident on Monte Cevedale. Written by Dr. de Neufville, who attended the survivor, it is naturally more accurate than any of the accounts hitherto published in the English newspapers.

On August 17 three parties left St. Gertrud in the Suldenthal, to sleep at the Schaubachhütte and ascend Monte Cevedale on the next day. The first party consisted of Dr. Salomon, Herr Heinitz, and Dr. Sachs, with two guides, Reinstadtler and Züschg. The other parties were made up of a Viennese gentleman and his guide, and two Berlin students, with a guide. Starting at 4 A.M., the first party reached the

last slope leading to the crest of the peak about eight. The rope was in use, a guide being at each extremity, and the three travellers in the middle. The first guide was cutting steps when Dr. Sachs, the last of the travellers, slipped and pulled down, first, the (so-called) guide behind him, and then the three men in front of him. All five now slipped over the *frozen snow* some 200 feet. Here their fall seemed to be arrested by a slight hollow, so that the members of the other parties, who were spectators of the disaster, thought them saved. This hope lasted, however, only for a moment. The first four men hung over the slope; the rope broke between them and the last guide, who was left dead in the hollow, while his five comrades flew like the wind for 2,000 feet down the slopes of the Cèdèh Glacier. The foot of the last steep slope was traversed by a large crevasse. The leading guide and Dr. Salomon were thrown over it, the other two travellers fell into it, and, the rope breaking a second time, disappeared in its depths.

The horror-struck spectators sent their guides down at once to the spot, where they found the guide dead, Dr. Salomon living, but unconscious. The Austrian descended to Sulden, the Berlin students to Santa Catarina to seek for help. [Dr. Salomon seems to have been left alone?] Dr. Salomon on regaining consciousness found himself by the side of his dead guide, without his companions, and crippled by a broken leg. The unfortunate traveller lay helpless on the ice until about 7 P.M., or 11 hours after the accident; help was then brought from the valley. He was carried that evening to a *châlet*, and next day to Santa Catarina. His only serious injury proved to be a double fracture of the right leg, which Dr. de Neufville, when he wrote, hoped would be cured in two months. The corpses of Dr. Sachs and Herr Heinitz were recovered on the 20th from a depth of 40 mètres (?) by Luigi Bonetti with a party of Sta. Catarina guides.

I have been further informed, though not on first-hand authority, that the second 'guide' was a mere porter and did not carry an ice-axe, and that there was only one ice-axe in the party.

So large a loss of life in the Alps has of course given rise to much comment in the English press, the greater part of it, as usual, ignorant and idle, and all of it more or less impaired by want of acquaintance with the exact details and particularly the locality of the accident. Two letters which appeared in the 'Times' deserve, however, the attention of climbers. Dr. du Bois Reymond, as a friend of Dr. Sachs, who was a scientific observer of great promise, wrote to Dr. Tyndall, describing the catastrophe, and calling on the English Professor to use his influence as a climber to enforce the practical lesson the writer drew from it.

This lesson Dr. du Bois Reymond thus states: 'The whole accident has been simply due to the same insane method of using the rope which caused the deaths at the first ascent of the Matterhorn. The three travellers had two guides, and all five were tied together.

'Now, there can certainly not be a more safe and simple contrivance than the rope, when several men are tied together in travelling over a glacier of slight inclination at right angles with the crevasses. Two men of moderate power, especially if the rope be kept tight, will always be able to stop the fall of a third one between them or at the end of the

row. But in a case like this, evidently the rope does not afford the slightest security, and the result always will be that if one of the men slips the whole party is lost. A man with his feet in two steps and his alpenstock most likely on the mountain side is not at all prepared to bear a strong jerk downhill, and will have great trouble in doing so even if he be prepared. The only safe manner to cross such places will be that the two guides take over first one, then the other, then the third traveller, and so on; a slow process to be sure, but certainly preferable to the loss of the whole party. Two stout guides with even a nervous traveller between them will always be able, either holding him by his hands or by the rope, to convey him safely over any place.

‘I write this to you in order to know if you agree with me in condemning the method used in the case of the Matterhorn and in this new appalling accident, and to ask you to use your influence to instruct the guides to desist from the perilous practice.’

Professor Tyndall’s answer, illustrations apart, was as follows :—

‘I entirely agree with you that where a steep ice-slope is to be crossed obliquely, the proper plan would be to cross it with one traveller between two guides, and that cases may occur where it would be the bounden duty of the guides to adopt the exact method you propose. But I doubt the possibility of making the rule general. On the Matterhorn, for example, it would be no easy matter for a pair of guides to make the transit to and fro over the slope where the catastrophe occurred in 1865, so as to carry three travellers in succession safely down it. In fact, the notion would not be entertained. The proper plan in places of acknowledged danger is to take the proper complement of guides, and on a slope like that which you describe to place each inexperienced man between two experienced ones. It would undoubtedly be sometimes advisable to break a large party up into sections, each with its own guides. Two guides and three inexperienced travellers is a wrong proportion.’

With Professor Tyndall’s reply so far as it goes I entirely agree. But I think that Dr. du Bois Reymond’s remarks, unless more fully examined, are likely to prove mischievous by discouraging the proper use of the rope. Dr. Reymond proposes, in fact, that on all steep slopes the rope should only be used in a manner which Professor Tyndall justly characterises as not generally possible. Of the difference between the proper and improper use of the rope Dr. Reymond seems scarcely to be aware, and it is on a knowledge of this more than on anything that all practical mountaineering is based. He seems to think that the rope is only of service for parties, as generally constituted, in crossing glaciers of gentle slope in a direction at right angles to the lie of the crevasses! ‘In a case like this,’ he says of the Monte Cevedale slope, ‘the rope does not afford the slightest security; if one slips all are lost.’

The slope in question is well known to me. After having ascended from the Cede Glacier, apparently as nearly as possible in the line of the fall, I climbed it in 1873. Under ordinary circumstances it is an easy snow-slope. Mr. A. Williams, who traversed it only five days before the accident, writes as follows :—

‘I found the last slope of the Cevedale soft snow. The night had

been clear and cold, and the morning was perfectly fine, and yet at 10 A.M. we sank 12 to 14 inches at every step. I remarked to Anton Ritz of Blitzingen—my guide and companion for seven or eight seasons—"The mountains are more like the beginning of July than the middle of August." He replied: "The snow is often in better order at the end of June."

'This was on the Tuesday before the accident; on the following Wednesday and Thursday evenings it rained, and the Friday was abominably wet. The talk in the 'Times' about an ice-slope is therefore absurd.

'Bad slips are, I think, sure to arise even in easy places if some foreign climbers continue to be more anxious to have their club insignia in their hats than nails in their boots. I this year saw two men thus decorated start for the Königs Spitze, whose footprints in the mud showed that both had boots absolutely without nails.'

On snow-slopes of this kind I have no hesitation in saying that any competent amateur, much more a guide, would be able easily to hold up his companion. Dr. du Bois Reymond's argument is bad from beginning to end. In such places mountaineers who take unskilled companions with them should always be prepared for a slip, and have no trouble in stopping one when it occurs. A good plan is to twist the rope once over the axes, which are driven in at the point as deeply as possible [if the slope is hard, the axe-head may be used instead of the point]. A slip in front is thus made less formidable, as, the axe being thrust in above the climber, no direct downward strain is brought on him; a slip behind encounters a double resistance.

It is not, however, in my opinion, on such easy slopes as those of Monte Cevedale, that the use of the rope ought to find its limit. Places where the proper use of the rope is not a safeguard to a duly-arranged party are, I believe, very rare indeed. By a duly-arranged party I mean a party of which every alternate member, including the first and last, is an experienced climber. The number of lives saved by the rope can never be known. But illustrations abound. Professor Tyndall in his letter gives one instance where on the side of the Aletschhorn one guide saved a whole party; his own adventure on Piz Morteratsch is another. François Devouassoud has twice prevented accidents on slopes which are to anything on Monte Cevedale as the sides of Snowdon to Primrose Hill. I am unwilling to quote personal experiences; but like all fairly experienced travellers I have had many proofs of the power the rope gives to amateurs as well as guides.

Even in traversing transversely a slope of hard ice, I should advocate the use—the most careful use—of the rope. It is true that if one man fairly falls in such a position he will probably pull down his companions. But then the rope may be so handled as to render such a fall almost impossible. If the alternate men stand still with their axe-heads firmly anchored, slowly paying out the rope while their comrades advance, it is easy for them at the least symptom of a slip to give the check which restores balance, or, as the mover goes round a ticklish corner, to give him that slightest support which makes a step both morally and physically easier. I have crossed many such

places, and have always found great assistance from the rope, and never seen an accident from one of the party's weight being partly thrown on a companion prepared to render aid.

It can scarcely be needful to add that in such situations the first precaution of all is good steps. There are some guides who in hard ice cut steps it is almost impossible to slip out of. These men are, I fear, exceptions, and a not unnatural impatience on the part of their employers sometimes leads to their getting more blame than thanks for their terribly hard work. Let us all do our best to keep up the tradition of the best guides that in 'black ice' steps should be hewn regardless of time and labour.

The lessons of the Matterhorn accident and of the Cevedale accident are different.

The Matterhorn taught *firstly*, that on expeditions of great or unknown difficulty, the party should consist *only* of seasoned climbers; *secondly*, that if a party, including a weak member, have the misfortune to find themselves committed to a very difficult descent, the strongest guide should be put behind the tiro, and should remain motionless in secure positions, while he lets down his charge step by step to the length of the rope. What Professor Tyndall says of Dr. Raymond's suggestion with reference to the Matterhorn is generally true. In most dangerous places the difficulties of unroping and roping, of passing and repassing, are so great that 'the notion would not be entertained.'

The Monte Cevedale is much more like the Cima di Jazzi than the Matterhorn. Beginners must have some practice ground, and this is essentially a peak for beginners. But there are few peaks on which a party of men, unused to the Alps, cannot kill themselves by a little clumsiness or carelessness. The lesson of this year's catastrophe is, that on all snow expeditions, however easy, which entail roping, the beginners should be in a minority; that every tiro should be put between two competent men, whether guides or trained amateurs. There are many amateurs who are as well able as guides to take care of a companion on easy slopes, though they would prudently refuse such a responsibility in ascents of serious difficulty. On all such expeditions also, it is expedient that every one should carry the mountaineer's anchor, the ice-axe. The mountaineers need it for use, the beginners ought to have it to learn its use. This accident, I must repeat, is no warning against the use of the rope. It is, as the 'Saturday Review' has said, only its slovenly or half-hearted use which is to be unconditionally condemned.

A sad accident, the death by drowning of Mr. Pratt in the Lake of Como, has taken away one of our most active and esteemed members. But it is our good fortune this year to record no Alpine accidents of any sort to English climbers. The Bernina group, however, has been the scene of two dangerous adventures. In one case, a party descending from Piz Bernina were caught in a snowstorm and lost the track on the upper snowfields of the Morteratsch glacier, spending 33 hours in the fog before they found their way to Boval. A good map and compass would probably have saved them from this exposure; a compass

ought to be part of the outfit of every guide and traveller. The second adventure happened on the crest of Piz Palu. The leading guide went too near the edge, and the cornice gave way with him and two travellers. The remaining guide had fortunately kept a little lower, and was able to hold up his three companions till one of them secured with his ice-axe a foothold on the slope on the face of which they were hanging. Coming after the Lyskamm accident, this terribly near escape ought to be sufficient to warn all guides of the dangers of corniced ridges.

It is, perhaps, hardly fair on 'mountaineering' that every accident below the snow-level should be ignored, or that the only ones to which prominence is given should be such harmless follies as that of the gentleman who preferred a grass slope and the water of his umbrella, for a week, to a bed and table d'hôte in his hotel at Grindelwald. Several deaths have been recorded this year in the lower Alps by the German papers, which show that a botanical or geological taste is often as dangerous as the climber's. A German fell over a cliff on Pilatus in endeavouring to break off a specimen of the rock; another, in trying to secure a rare plant, perished near Mürren. A young Bernese was killed on the rocks of the Suleck.

EDITOR.

IN MEMORIAM.

THE LATE MR. J. H. PRATT.—By the lamentable death of Mr. J. H. Pratt, who was accidentally drowned while bathing in the Lake of Como on August 31 last, the Club has lost a valued and active member. All that can be known of the circumstances of this sad disaster has been told by Dr. Butler in the letter to the 'Times,' from which the following sentences are extracted:—

'At Cambridge Mr. Pratt had won the Bell Scholarship and the Browne University Scholarship. In 1872 he was Senior Classic. The following year he was elected Fellow of his College, having meanwhile accepted a mastership at Harrow.

'Like many eminent scholars and men of science at the present day, he was a daring and practised Alpine mountaineer. Among the younger members of the Alpine Club few can have surpassed him in the number and difficulty of first-class ascents. On such expeditions he was a perfect companion, cool, sure-footed, observant, humorously patient of hardship, and thoroughly unselfish. When, on the 14th of August, he reached Mürren after a difficult ascent of the Blumlis Alp—difficult because of the exceptional state of the snow—in the company of his brother Fellow of Trinity, Mr. Walter Leaf, he looked a model of health and endurance.'

'Mr. Pratt's loss will be long and deeply mourned by his old school-fellows at Haileybury, of whom he was so lately the head; by many Swiss travellers who knew his exploits on the highest Alps; by many of the ablest members of the great College of which he was so proud to be a Fellow; and, not least, by the masters and boys at Harrow, where his fine gifts of mind and of heart will be a sad and sacred tradition.'

It is proposed to place in Harrow Chapel a monument to Mr. Pratt's

memory. Personal friends of Mr. Pratt who wish to take part in it are requested to communicate with W. Leaf, Esq., Old Change, E.C., or the Rev. Dr. Butler, Harrow.

THE LATE DR. PETERMANN.—The Club has lately been deprived of one of its most distinguished honorary members by the death of Dr. A. Petermann. Dr. Petermann was confessedly the first geographer of Europe. A prolonged residence in England some years ago established between him and our leading geographers relations of the most cordial character, and his lively interest in our African, polar, and oceanic expeditions, as well as his vigorous initiative and enlightened support of similar enterprises in Germany, testify to his unwearied energy and activity, his geographical insight, and his practical grasp of details. As Editor of the well-known 'Geographische Mittheilungen' he published numerous valuable contributions to Alpine literature from the pens of Forbes, Von Sonklar, Payer, and others. It was by his agency that attention was first called in Germany to the Zillertal-ferner and the noble mountains of the Western Trentino, the Adamello and Brenta groups. He was the first to publish a map illustrating the Caucasian explorations of some of our members in 1868. Freedom from any private or national jealousy was a fine trait in his character, and will contribute to make his loss widely and deeply felt beyond the limits of his own country.

DEATH OF JAKOB ANDEREGG.—By many members of the Club and others, the news of this event, which occurred at Meiringen on September 17, will be received with deep regret.

Jakob Anderegg commenced his mountaineering career in the year 1864, comparatively late in life, but speedily established his reputation as one of the best and most daring guides of the Bernese Oberland. A catalogue of the new expeditions in which he took part, either as leader or second man, would include no small proportion of those recorded in the volumes of this Journal for several years; while few men had a more extensive general acquaintance with the peaks and passes of the Central and Western Alps.

A severe illness in the year 1874 left permanent effects on a constitution which had seemed to be one of more than average vigour, and during the past summer it was but too obvious to his friends that his health was failing; still there was nothing in his condition to prepare them for the news, which has now come, of his premature death at the age of 51 years.

Great physical strength and a keen mountaineering instinct combined to place Jakob Anderegg in the first rank of path-finders. In addition to these qualities he was endowed with a peculiarly sweet and equable temper, considerable sense of humour, and that spirit of unselfish devotion to his employer for which the best men of his class are remarkable. It is as a companion and friend, no less than as a guide, that his loss will be deplored and his memory cherished by all who knew him.

A. W. M.

Breche de la Meije, Pic du Grand Epaule, Pic Central, Pic Oriental, Pic du Grand Glacier, Pic.



THE MEIJE FROM THE VALLON DES ETANÇONS.

THE
ALPINE JOURNAL.

FEBRUARY 1879.

AN ASCENT OF THE MEIJE. By W. A. B. COOLIDGE.
(Read before the Alpine Club, December 18, 1878.)

ONE bright summer morning in August, 1877, soon after my return from an unusually short holiday among the mountains, a foreign post-card was placed in my hands, which proved to contain the startling news of the conquest of the Meije on the 16th of that month by M. E. Boileau de Castelnau, whom I had met at La Bérarde some three weeks previously. As this card was written to me by my friend M. Paul Guillemin, from Vallouise, on his return thither from the inauguration of the Refuge Césanne, in the Pré de Madame Carle, and countersigned by M. de Castelnau himself and several other French friends, it was impossible to doubt its genuineness, though I was on my guard, remembering the great 'M. Stewenart' hoax of the preceding autumn, which also related to the Meije. This intelligence was the more startling to me because I had just spent two days in examining the southern or Etançons face of the mountain, by which M. de Castelnau was said to have made his ascent, had made an attempt from the Brèche de la Meije along the western arête, and had quitted Dauphiné fully convinced that if ever the Meije was climbed, it would be along that eastern arête which is so formidable in appearance, and is likely, I think, to prove so in reality. Unfortunately, before M. de Castelnau was able to draw up a narrative of his ascent, he was called away to serve his 'volontariat' in the French army, and his time was too much taken up by his military duties to allow him to satisfy the great curiosity and interest which his remarkable exploit had excited in Alpine circles. M. Jullien, the secretary of the Société des Touristes du Dauphiné, sent me a few particulars, gathered from M. de Castelnau himself, and these, together with the tantalisingly meagre notice sent by M. de

Castelnau to his own Club,* were published in the Journal for November, 1877.†

It was, perhaps, to be expected that under these circumstances some doubts as to the reality of the ascent should be expressed; and though not sharing in them myself, they confirmed me in the project which I had at once formed for the next summer of attempting to repeat the expedition, thinking that, as I could not be the first on the summit, it was better to be second than nowhere.

Time passed on. M. de Castelnau sent me a few lines, promising an article for the May number of this Journal, which promise, however, he was unable to fulfil; and as a strike of the Paris printers delayed the appearance of the 'Annuaire' of the French Alpine Club till late in the summer,‡ the honour of publishing the first connected account of the ascent fell to the 'Durance,' a newspaper of Embrun, the Alpine portion of which is superintended by M. Paul Guillemin. It published in the number for May 19, 1878, a narrative, taken down from the lips of Pierre Gaspard (père), the leading guide of M. de Castelnau, which is very pleasing in its modesty and simplicity. On my way through Paris a month later (June 26), I called in at the rooms of the French Club in the Rue Bonaparte, in hopes of getting my copy of the 'Annuaire.' I did not succeed in attaining my object, but I got something which was more immediately valuable and useful, viz. early proofs of M. de Castelnau's article, for which I beg to offer my best thanks to the authorities of the French Club. Armed with these, I left Paris that evening, and rejoined my guides (Christian Almer and his second son, Christian), next day at S. Michel, on the Cenis road. After an attempt at exploration round the Aiguilles d'Arve, which was defeated by bad weather and the great quantity of snow still on the mountains, I reached La Grave on June 30. I need scarcely remind my readers that the Meije rises in all its magnificence just south of the village, or that La Grave has been the starting-point for most of the attempts made to scale that peak. We looked eagerly for the cairns on the summit, but were unable to distinguish them, because, as we later discovered, they were almost buried in snow. As I said before, I had quite made up my mind to be

* Published in the 'Troisième Bulletin trimestriel du C. A. F., 1877,' p. 303.

† Pp. 328, 329.

‡ M. de Castelnau's article will be found in vol. iv. (1877), pp. 282-294.

second on the top, and I had fancied that so early in the season I should have the field to myself; but as soon as I reached La Grave I heard of several mountaineers, whom I looked on as dangerous rivals, and who were reported to be already on the spot, or were shortly expected. Consequently we hurried over to La Bérarde on July 3, where we found ourselves alone. There was still so much snow on the Meije, owing to the lateness of the season, that we were compelled, however reluctantly, to postpone our attack, and had to content ourselves with mounting guard at La Bérarde.

At length my patience was exhausted, and we camped out in the Vallon des Etançons on July 7; but next morning the weather was undecided, and, as we had resolved to start only if it was 'beau fixe,' we returned with heavy hearts to La Bérarde. I should not have mentioned this abortive attempt were it not that we discovered on this occasion a bivouac which is far more sheltered and roomy than the great boulder on the 'oasis' known as the Hôtel du Châtelleret, the usual camping place in the Vallon des Etançons (2,267 mètres). It is situated almost immediately opposite, on the western side of the valley, and consists of a deep recess in the cliffs, which affords space for a large party, and is *perfectly* sheltered from rain. The opening is only partially seen from below. It is a quarter of an hour or twenty minutes from the Châtelleret, and is strongly recommended.

On July 9 the weather seemed more promising; we bivouacked again in the spot just mentioned, and lay down to rest with every prospect that our patience was at last about to be rewarded.

In order to make what follows clear to my readers, I must ask their attention for a few minutes while I endeavour to give them some idea of the appearance of the Meije as seen from the south side—that is, from the head of the Vallon des Etançons. The splendid engraving* which forms the frontispiece of this paper will enable them to realise my description still better.

The main ridge of the Meije runs very nearly E. and W., and is crowned by four principal peaks, overhanging Glacier des Etançons. First comes (reckoning from E. to W.) the Pavé, rather to S.E. of highest ridge (3,831 mètres = 12,570 feet), so called from the singular arrangement of the blocks of

* This is based on a large photograph by M. Grand, of Briançon, one of a large set taken under the auspices of the Briançon section of the French Alpine Club, and on a smaller one by M. Duhamel, to whose kindness I am indebted for a copy.

a moraine on the Gl. des Cavales at its base, a rocky point. Beyond a rather deep depression we see the Pic Oriental of the Meije (3,911 mètres = 12,832 feet), climbed by M. Duhamel in 1878, and then the sharp pinnacle of the Pic Central (3,970 mètres = 13,026 feet), which leans over to the south in an extraordinary fashion, and from here, as from many other points, seems to claim the supremacy. This last summit was first climbed from La Grave (June 28, 1870) by my aunt, the late Miss Brevoort, and myself.* Farther to the left, or west, is a very jagged arête in which four great rocky teeth may be distinguished; and then rises, though not very steeply, the true summit of the range, known as the Grand Pic de la Meije (3,987 mètres = 13,081 feet), the whole being one of the most splendid mountain masses known to me. Referring my readers for an excellent description of the north or La Grave side of the Meije to Mr. Gotch's paper in a previous number of this Journal,† I will go on to describe the south face more accurately, in order that my readers may follow my route. The north and south sides of the Grand Pic are precipices pure and simple; it is probably possible to descend the east side to the first gap in the ridge leading towards the Pic Central; on the west side, however, it is more accessible, for, apart from the very highest rocks, a comparatively gentle slope falls down to a large snow-field, known as the Glacier Carré. Below the Glacier Carré a sheer precipice falls very nearly to Glacier des Etançons. Above the Glacier Carré, separated by a gap from the Grand Pic, is the Pic du Glacier (3,860 mètres = 12,665 feet), beyond which is the sharp, double-pronged pinnacle called 'Le Doigt.' Following the ridge towards the west, we come next to the Epaule, or Petit Doigt d'Epaule, and a long way farther down, to the left of a slight notch, is the 'Petit Doigt,' properly so called. Thence we descend to the large depression of the 'Brèche de la Meije' (3,369 mètres = 11,054 feet), beyond which the ridge rises again to form the fine peak of the Râteau.‡

From near the base of the 'Doigt,' a short way west of the Glacier Carré, a long and jagged spur stretches to the south, cutting the Glacier des Etançons into two parts. This

* 'Alpine Journal,' vol. v. pp. 130-1.

† Vol. viii. pp. 177-198.

‡ A map constructed from observations taken on the spot in 1878, by my friend M. Duhamel, will appear in the forthcoming 'Annuaire du C. A. F.' It is the first *accurate* map of this group which has been published, and contains numerous corrections of the existing maps.

seems to offer the natural route to the summit; but its appearance is so forbidding that it long deterred everyone from trying it. It is, however, by this way that the only two recorded attempts on the south side of the mountain, and the three successful ascents of the highest peak, have been made. On Sept. 27, 1876, M. Duhamel, starting from the route of the Brèche de la Meije, attacked this buttress from the west, and succeeded in gaining the crest, but was only able to advance a very short way farther; he estimates his highest point at about 3,580 mètres (11,746 feet), which is probably too high.* M. de Castelnau, on August 4, 1877, by the same route reached a point about 30 mètres higher, estimated at 3,485 mètres.†

Finally, a few days later (August 16, 1877) M. de Castelnau, with the two Gaspards, père et fils, succeeded in reaching the highest summit‡ by this route, which was also followed by my party on July 10, 1878, and by MM. Paul Guillemin and A. Salvador de Quatrefages, with the Gaspards, on August 12, 1878. In each case the crest of the southern buttress was attained, the wall climbed rather to the west of the precipices below the Glacier Carré, the Glacier Carré reached and traversed, and the final peak climbed from the west.

After this long digression I will now resume the narrative of my own ascent. The night of July 9 was fine, and at 3.20 A.M. on the 10th, while it was yet dark, we left our bivouac, carrying, in addition to a good stock of provisions, a rope of 100 feet, besides our usual one of 40 feet, as M. de Castelnau was reported to have left two ropes on the way, which were not likely to be in good condition after a winter's exposure. Never have I been in a greater state of nervous excitement on starting for any ascent than on this occasion. The Meije had exercised, and indeed still exercises, the same strange influence over me which the Matterhorn had on its early explorers; and though I knew I could trust my two faithful guides, yet I scarcely dared hope that it would be given me to attain the much-desired summit. We followed the usual route to the Brèche de la Meije, stopping 10 min. at the edge of the Glacier des Etaçons to put on our gaiters and to admire the sunrise. This time the weather could not have been more perfect. We skirted the base of the great southern buttress, and shortly after, at 5.20, reached the point on the glacier to the west

* 'Annuaire du Club alpin français,' vol. iii. (1876), pp. 336-7.

† Ibid. iv. (1877), pp. 284-286.

‡ Ibid. pp. 287-294.

where the climb was to begin.* This is seen in the engraving (in the deep shadow) near a small tongue of rock which projects into the glacier. The vertical height of the Meije above us is about 850 mètres (2,789 feet), according to my aneroid barometer.† Here we made our final preparations, leaving a cache of provisions after snatching a scanty breakfast, which was all our excitement would allow us to swallow. We hoped to be back again about 9 P.M., and to return to our bivouac by moonlight. Little did we know that 29 hrs. (of which about 19 were spent in active exertion) were to elapse before our return to the glacier!

At 5.40 A.M. we started on our adventures. Our first object was to attain the crest of the great southern buttress, from which a couloir partly filled with snow ran down towards us; but, unfortunately, between the end of the couloir and the glacier there is a wall of steep rocks. This, the first difficulty, was surmounted by a rather rough scramble, after which we mounted steadily, but without hurrying ourselves, by the route followed by our predecessors. At 7.15 we reached the small cairn built by M. Duhamel in 1876 to mark what was practically his highest point,‡ i.e. 1.35 from the glacier. M. de Castelnau took 1.15, having already traversed this portion of the ascent on his attempt a few days before his victory. We had thus accomplished about one-third of the total height of the Grand Pic above the glacier, without great difficulty. At 7.30 A.M., after leaving a bottle of wine there for our return, we started, casting anxious looks towards the precipitous rocky wall, above which peered the end of the Glacier Carré. The first steps were over broken rocks, and we then struck to the right across steep rocks to the upper edge of the highest of the two patches of snow seen in the engraving. After that we mounted more or less in a straight line to a point above the Epaule, a short distance to the west of the Glacier Carré, passing by M. de Castelnau's second rope, a short way below it. It will thus be seen that we did not mount the rocky wall immediately under the Glacier Carré, but kept to the rather less

* The height according to M. de Castelnau's barometer is 3,075 mètres; according to mine, 3,190, and according to M. Guillemin's, 3,188.

† M. de Castelnau makes it 925 mètres, and M. Guillemin about 887 mètres.

‡ The height of this cairn has been variously estimated. M. Duhamel himself gives 3,580 mètres, which is certainly too high; M. de Castelnau, c. 3,455; M. Guillemin, 3,510; my barometer indicated an elevation of 3,495 mètres (c. 11,467 ft.)

steep rocks to its left, or west. My readers probably know from their own experience how difficult it is to describe minutely a climb up rocks; at any rate, I do not propose to enter into a detailed account of the successive difficulties against which we had to struggle. Suffice it to say that, though the rocks are extremely steep, it is generally possible to find crannies wherein the tips of one's fingers and one's toes may be inserted. In fact, on the *ascent*, I was surprised to find that I got on much better than I had imagined, though I am bound to add that my expectations had perhaps been raised too high. It will appear later that this favourable opinion was materially altered on the *descent*. I hasten, however, to remove any impression I may have created that the climb is comparatively easy. On the way up it seemed easier to me than I had imagined; but even so the whole climb ranks with, and even surpasses in point of length and of *continuous* difficulty, the most difficult mountains with which I am acquainted.

It is probable that we followed precisely the same route as M. de Castelnau. Indeed, as far as I can judge, there is little or no room for variations. One can just get up the rocks, and that is about all that can be said for them. I cannot refrain from putting it on record in this place that Almer never *once* retraced his steps during the whole of this difficult ascent, and, in fact, led as if he were perfectly acquainted with the best route, though of course this was the first time he had ever been on the south face of this mountain.

Finally, after much toil and labour, we reached, at 9.45, the point to the west of the Glacier Carré to which I have before referred (c. 3,700 mètres); 2.15, as against M. de Castelnau's 2.45. The vertical height above M. Duhamel's cairn is, according to my barometer, 205 mètres (673 feet). M. de Castelnau makes it only 150 mètres. We were now at the spot whence a few steps over screes would have led us to the crest of the main western arête, whence La Grave can be seen. We were, however, too much absorbed in our endeavour to reach the summit to make this *détour*, which M. de Castelnau describes. We could not, however, refrain from admiring a very grand aiguille of bare rock on the arête below us. I believe it to be that part of the Epaule called the Petit Doigt d'Epaule, at the east base of which I was driven back on July 22, 1877, as will be described later on. It is engraved from a photograph taken by M. Duhamel at p. 331 of vol. ii. (1875) of the 'Annuaire' of the French Alpine Club. We made another attack on our provisions here, which was very welcome after our severe exertions, and, leaving a second cache, resumed the

ascent at 10.10, after 25 minutes' halt, in a joyful frame of mind, since we knew from M. de Castelnaud's experience that there were no more serious difficulties to be overcome till quite near the top. To reach the Glacier Carré we had to traverse some smooth rocks at a considerable incline, and covered with a slight coating of snow. This 'trajet' of 10 minutes was not very hard, although from below we had always imagined it would prove very tough; indeed, after our return to the valley, and even at this very moment, I cannot understand how we got across, although I cannot recall any special difficulty. This is an extreme case of the exaggerated steepness of rocks when examined from a distance. We now found ourselves on a small platform at the S.W. extremity of the Glacier Carré. It was here that my friends MM. Guillemin and Salvador de Quatrefages spent the night after their ascent.* M. Guillemin also gathered in this spot three plants, the names of which may interest the botanical members of the Club. They are *Linaria Alpina*, *Androsace glacialis*, and *A. Charpentieri*.†

We entered on the glacier at 10.20, and could scarcely believe we were actually treading what we had so long looked at with eager eyes. We mounted straight up it, keeping close to the base of the Doigt, then of the Pic du Glacier. We gained a glimpse of La Grave from the gap between the Doigt and the Pic du Glacier, and another from that between the Pic du Glacier and the Grand Pic. At 11.5 we had reached the base of the rocks of the final peak, i.e. 45 minutes from the S.W. end. M. de Castelnaud took the same time, and M. Guillemin's party 55 minutes. This glacier is not a glacier properly so called—at least we could not see any crevasses—but is rather a large field of snow or névé. At the time of our visit there was still an enormous quantity of soft snow. The inclination is much greater than we had imagined from below. M. de Castelnaud puts it at 45°.

The lower portion of the final peak consists of rocks, which can be called easy only by comparison with those previously climbed; and it seemed to us that M. de Castelnaud had made too light of them. Still we advanced rapidly until we reached the base of the last pinnacle, which Gaspard calls the 'Chapeau du Capucin.' It rises sheer for a great deal more than the 10 mètres of which M. de Castelnaud speaks above the face we had

* M. Guillemin makes the height 3,754 mètres (= 12,317 feet).

† M. Guillemin writes to me (Jan. 8) that a more careful examination has led him to the conclusion that the two last-named plants are really *Myosotis nana* and *Saxifraga oppositifolia*.

been climbing, something like the last bit of the Matterhorn above the Zermatt face. It was here that M. de Castelnau spent a long time searching for the way, and we did pretty much the same thing. It was obviously impossible to climb straight up. To the left stretched the main west arête; and we gathered from M. de Castelnau's description (which I here read aloud) that he had gained the crest at some point or another. But the question was, which was this point? We saw a small rocky pinnacle on the arête, to the right of which the rocks literally overhung their base; to the left was a narrow gully of most uninviting appearance, filled with just enough snow to make it dangerously slippery, which led up to a slight depression in the arête. M. de Castelnau's highest rope was nowhere to be seen. I really thought for some time that we would have to return discomfited; but our gallant leader went off to explore, and by-and-by came across the abandoned rope, which the wind had carried over to the La Grave side, where it was found rolled up in a heap of snow. Greatly encouraged, we managed to crawl up the aforesaid gully, which did *not* belie its appearance, and reached the crest of the arête. Gaspard's narrative had led me to believe that his party descended from the arête on to the slope facing La Grave, and had so gained the summit from the north. But there was now altogether too much snow on that side to allow of its ascent; and we were forced, after circumventing the rocky pinnacle mentioned above, to keep along the crest of the arête.* This was far from easy; but the top was now in full view, and our blood was up. Soon the ridge melted into a slope composed of rocky fragments, and at 1.20 P.M. we found ourselves standing by the side of the two cairns erected by M. de Castelnau. We had taken 2.15 from Glacier Carré, as against M. de Castelnau's 2 hours and M. Guillemin's 1.45.

It was a moment of my life which I can never forget. Yet my feelings were very mixed. The pleasure of having attained a long wished-for goal was very great, but at the same time my thoughts recurred involuntarily to my companion on many expeditions in Dauphiné, one of whose most cherished wishes it had been to stand on this lofty pinnacle, a wish which was doomed to remain for ever unsatisfied. These conflicting emotions, added to great physical fatigue, incapacitated me, I regret to say, from profiting as much as I had hoped by my short stay on the top. The following details, however, may be of interest:—The summit consists of a short ridge, running

* MM. Guillemin and S. de Quatrefages also adopted this route.

nearly due east and west, and is composed of rocks,* which on the north side are very disintegrated, and slope away gently at first, but on the south fall sheer away at once. The ridge, in fact, is unexpectedly broad, and strewn with loose rocks, with which M. de Castelnau had built two cairns, which the great accumulation of snow on the north side had prevented us from distinguishing when at La Grave. We added a third, more to the east, and left a fragment of a red flag, brought from the Sommet des Rouies, and my pocket-handkerchief, which we later clearly made out from La Grave. The handkerchief was restored to me by M. Guillemin at the 'fête du Lautaret' on August 14. I shall, no doubt, be asked what I saw from the top; but I am ashamed to say that I paid but little attention to the view. The Meije had been in my eyes a mountain to be climbed for its own sake, and not for the sake of the view—a fault or merit which I cannot attribute to many other mountains. Besides, there were really some light mists about, which interfered with the view. M. Guillemin informs me that he enjoyed a most splendid panorama. I can recollect seeing La Grave at an enormous depth below, but we could not distinguish the people before M. Juge's hotel, as M. de Castelnau succeeded in doing. But there was one object which could not fail to arrest my attention—the Pic Central, on which I had stood eight years before, which from this point assumes a most extraordinary appearance, and leans over towards the Glacier des Etançons in a more crazy manner than usual, which is saying a good deal. It is a marvellous sight, and seemed to overtop us, though when on it the Grand Pic in its turn had seemed the higher. The French map attributes 17 mètres, or 56 feet, more to the Grand Pic. We also scanned with curious eyes the ridge which lay between us and the Pic Central; it looked even more hopeless and forbidding than before, the teeth being most formidable. Almer, indeed, descended a short way towards the first gap towards the east, and declared that it would not be impossible to descend into it; but the tooth which rises above it is very steep, if not indeed perpendicular, and would, I fear, baffle even that member of the Club who is most gifted with fly-like capacities of climbing. But time flew rapidly by, and after a hasty dinner, and

* M. Guillemin informs me that he found two species of rocks on the summit—granitoid gneiss, and protogine containing white orthoclase. M. de Castelnau makes the height 4,000 mètres; my barometer read 4,040 mètres; M. Guillemin says 4,075 mètres; the French map gives 3,987 mètres.

leaving my card in a bottle (as far as I can recollect), we began the descent at 2.10 P.M., after 50 minutes' stay on the summit. We followed exactly the same route as on the ascent, but we found the descent to the highest ridge much more difficult than the ascent, and, besides, the excitement of the climb had nearly passed away. It was not till 3.15 P.M. that we reached M. de Castelnau's highest rope, which we carried off as a proof of the reality of our ascent. We worked down the rocks slowly and steadily, and at 4.40 regained the Glacier Carré. Treading in our old steps, and going very cautiously, owing to the deep soft snow, we took to the rocks again at the spot which was to form the camping place of MM. Guillemin and Salvador de Quatrefages a month later, and reached our first cache of provisions at the point above the Epaule at 5.15. In order to prepare ourselves for the terrible descent of the wall, we made a last onslaught on the contents of the knapsacks, hoping to regain by nightfall our chief depôt on the Glacier des Etaçons. We set off again at 5.30 P.M. The rocks had seemed difficult, though not excessively so, on the ascent; on the descent, as rocks always are, they were ten times worse; and as, in addition to unusual fatigue, owing to my half-trained condition, I was further handicapped by my short sight, I was only able to advance very slowly. The descent of this wall will always remain in my mind as the most arduous and terrible piece of climbing it has ever fallen to my lot to perform. When I say this, I am speaking deliberately, and in the conviction that I am not exaggerating the impression it made upon me. Those who may follow may very possibly think that I have rated the difficulty too high. This *may* certainly be the case; it is notorious that descriptions of rock-climbs rarely satisfy everyone. All I do now is to record *my own* experience on these rocks. Little by little we gave up all hopes of reaching the Glacier des Etaçons that evening; but we still fondly imagined that we might reach M. Duhamel's cairn, where we had left a bottle of wine. But even this was denied us. As soon as dusk came on my eyes, as usual, gave out; and at 9.30 P.M. (after a day of more than 18 hours) we resolved to spend the night where we were.* This spot was a very small platform—a shelf in the rocks, perhaps 12

* We were about two-thirds of the way down from the Glacier Carré to M. Duhamel's cairn—say, 3,560 mètres = 11,680 ft. M. de Castelnau states that the spot where he passed the night was 15 or 20 mètres above M. Duhamel's 'pierre humide,' and Gaspard that it was 80 or 100 mètres above M. Duhamel's cairn. I am inclined to think that the two nights were passed at very nearly the same spot and height.

feet by 4. There was a projecting knob, on which I sat, or tried to sit, but the two men could only sit with their legs over the precipice, and we found it of mutual advantage that they should lean against me, by which means we were all warmer than we should otherwise have been. One very small bit of cold meat was discovered in the knapsack, but beyond this we had literally nothing either to eat or drink, not being able even to get any snow to slake our burning thirst. We hoped that when the moon rose we could go on, but envious clouds covered her, with few intermissions; and Almer thought it wiser not to move, as we might not succeed in finding another spot as suitable (alas! only by comparison) as this. We tried to tie ourselves to the rock by the rope, but we could not find any projecting point that would do, so we could not venture to go to sleep, and tried to enliven each other by telling stories and singing songs. But the exertions of the day had told on us, and one after another we dropped off into uneasy slumbers, only to be awakened by our alarmed companions. Fortunately we did not have to stand the terrific storm to which M. de Castelnau and his companions were exposed. The night was fine, though once or twice a few flakes of snow fell, but bitterly cold. It was the first time I had ever been caught by night at such a great height without having any covering or food; and this will help to grave the incidents of this ascent in my memory. At one time the cold was so intense that I thought I must succumb to it, and it was only by vigorous rubbing that my limbs were restored to animation. Towards sunrise a small keen wind came on, which filled up the measure of our troubles. The sun rose in clouds, and it was only at 4.40 A.M. that we dared to start. We were dreadfully cramped, and much exhausted physically, so that it took us nearly three hours (4.40 to 7.30) to descend the 200 or 250 feet which separated us from M. Duhamel's cairn. Here we found that precious bottle of wine of which we had thought so often and so tenderly during the night, and I draw a curtain over our thorough appreciation of it. After a halt of 40 minutes we started again on our weary way at 8.10, and crawled down the couloir and steep rocks below it. It seemed like a nightmare until, at 10.45 A.M., a last jump landed us on the snow of the Glacier des Etançons, just 29 hours after having left it. We had indeed won the day, but we had paid dearly for our whistle. Needless to say that we made up for our previous forced fast by a hearty onslaught on the provisions, which we found untouched. When we set out again, at 11.10, I found that the exposure had so affected my breathing powers that I

was not able to do more than walk slowly down the valley to our bivouac, which we reached at 12.25. We spent the rest of the day in delicious slumbers, and returned to La Bérarde late in the evening. We had not divulged our intentions before starting, but Rodier had guessed them, and was beginning to be anxious at our non-appearance. M. Rochat, of the French Alpine Club, had just arrived there with his guides, the two Gaspards, to whom we presented their rope, which we had brought down as a trophy, reserving merely a fragment to be ever treasured by me as a souvenir of our long and perilous expedition. Succeeding parties may laugh this whole account to scorn, but the Meije will then have lost its strange fascination, though for me it will ever be surrounded by a halo of romance.

To make this paper as complete as possible, I may mention that, incited by my success, my friends MM. P. Guillemin and A. Salvador de Quatrefages, with the two Gaspards, made the third ascent on August 12, by the same route. They took several photographs from the top and on the way, and brought down the other rope left by M. de Castelnau. Profiting by the experience of their predecessors, they wisely did not attempt to descend farther than the platform at the S.W. extremity of the Glacier Carré, where they spent the second night at a height of 3,754 mètres (12,317 feet), reaching La Grave next day by the Brèche de la Meije.

An attempt to repeat the ascent, made on Sept. 6, by Mr. Charles Moreing, an engineer at the mines of L'Argentière, between Briançon and Embrun, failed because of the unsettled state of the weather.

I shall be, perhaps, expected to express an opinion on the practicability of the other routes by which the Meije has been tried, though hitherto without success.

The route from the east, either over the teeth in the arête or along the 'corridors' on their northern face, would, I am convinced, involve an unjustifiable amount of risk. Bearing in mind what has been done in the Alps by men seeking some fresh sensation, I cannot say that this route is *impossible*. If the snow were in a very favourable condition, a party of well-tried climbers might conceivably succeed in making their way along the 'corridors' to the gap at the east base of the highest peak, which is accessible from thence. It would be, however, a very hazardous expedition, in which a slip would necessarily involve the destruction of the whole party, and it would be worse than foolhardy to attempt to return the same way.

An attack on the Meije from the south, otherwise than by

the route hitherto followed, would not, I believe, have the slightest chance of success.

There is, however, one route which may very probably prove to be practicable. The point to be arrived at is the depression between the Doigt and the Epaule. In July, 1877, I attained a height of 3,550 mètres = 11,648 feet* (probably too high a reading of my aneroid), on the arête running up eastwards from the Brèche de la Meije, and was only stopped from attaining this depression by a very bold aiguille of bare rock—the Petit Doigt d'Epaule. A few days later M. Guillemin, starting from the Glacier de la Brèche, climbed by the north-west rocks of the Meije to a height of 3,620 mètres = 11,877 feet, a few mètres (50 to 20, according to different estimates) below the above-named depression. Once there, it would probably not be difficult to rejoin M. de Castelnau's route at the point where it approaches the main western arête, a short distance west of the Glacier Carré. I am decidedly of opinion that this is the most promising of the still remaining routes which have been imagined for reaching the top of the Meije.

And now a few words in conclusion of this long paper, which has, I fear, sorely tried the patience of my readers. It will be evident, from what I have said above, and even merely from the fact that each of the three parties which have hitherto succeeded in effecting the ascent—and none of the members of which, I think I may venture to say, were novices in mountaineering—has been obliged to spend a night out on the mountain, that this is no ordinary expedition, though the actual number of feet to be climbed is not great. It makes greater demands on the powers of endurance than any other mountain with which I am acquainted; and, as far as my experience goes, it is the *longest continuously difficult climb* (save the Glacier Carré there is nothing which can be called *easy*) in the Alps. It would not be very hard to name more difficult bits on other peaks, but as a whole it far exceeds all other peaks in difficulty. Even the rocks of the Pic d'Olan do not come up to it. To take more familiar instances, neither the Rothhorn, nor the Dent Blanche, nor the Bietschhorn can be compared with it for a moment. But it is a noble mountain, and I should be very sorry if the description I have given of my ascent were to prevent any enterprising member of the Club from going to look at it or ascend it.

* About 135 mètres above the eastern or higher end of the ridge of the Brèche (3,415 m.)

APPENDIX.

a. *Attempts on the Meije (continued from vol. viii. p. 198).**

Date.	Description.	Travellers.	Guides.	Report.
1877. 3-4 April	Bivouac at the Rocher de l'Aigle; snow-storm in night and bad weather compelled retreat.	Léon Fayolle, Paul Guillemin.	Jean Bouillet, Pierre Dodde, Emile Pic, G. Mattionnet, Louis Faure, Fr. Castillan.	'Bulletin du C. A. F.,' 1877, pp. 104-112.
June 1	M. H. Cordier reaches the Gl. de Tabuchet, but descends, declaring that the ascent is impossible. The La Grave guides followed this party with their eyes all the way.	H. Cordier.	Jacob Anderegga, A. Maurer.	'La Durance,' July 8, 1877.
13. June 27	Attempt by the 'corridors' on the North face of ridge above Gl. de Tabuchet.	Lord Wentworth.	L. Lanier, E. Rey.	'Ann. S. T. D.,' iii. 80.
14. June 29	Attempt from Brèche de la Meije. No details known.	Lord Wentworth.	L. Lanier, E. Rey.	'Ann. S. T. D.,' iii. 80.
15. July 22	Attempt by arête running down to Brèche de la Meije up to a point slightly beyond that attained on July 12, 1875, about 135 mètres above the Brèche, i.e. foot of Petit Doigt d'Epaule (cf. 'Ann. du C. A. F.,' ii. 331).	W. A. B. Coolidge.	Christian Almer, père et fils.	'A. J.,' viii., p. 195, and paper prefixed to this list.
16. July 30	Attempt on north-west face from Glacier de l'Arête to reach the depression between the Epaule and the Doigt. A height of 3,620 mètres reached, about 50 mètres from the crest of the ridge.	Paul Guillemin.	Emile Pic.	'Ann. C. A. F.,' iv. 575-6.
17. July 30	Attempt by a couloir nearer the Brèche. Rocks extremely rotten; a height of 20 mètres from the glacier attained.	Paul Guillemin.	E. Pic.	'Ann. C. A. F.,' iv. 577.
18. Aug. 4.	Attempt by the great south buttress; a point about 30 mètres beyond that reached on Sept. 27, 1876, attained, or about 3,485 mètres; according to another account, about 55 mètres above M. Duhamel's highest point.	E. Boileau de Castelnau.	P. Gaspard, père et fils.	'Ann. C. A. F.,' iv. 284-286. Cf. 'Ann. S. T. D.,' iii. 80.

* The full report of M. H. Duhamel's three attempts by the great south buttress (attempt No. 12) is to be found in 'Ann. C. A. F.,' lii. pp. 333-338.

Attempts on the Meije (continued).

	Date.	Description.	Travellers.	Guides.	Report.
19.	1877. Aug. 16	<i>1st ascent of Grand Pic</i> by south buttress, wall to west of Glacier Carré, and west slope of highest peak.	E. Boileau de Castelnaud.	P. Gaspard, père et fils.	'Ann. C. A. F.,' iv. 287-294.
20.	1878. July 10	<i>2nd ascent of Grand Pic</i> by same route.	W. A. B. Coolidge.	C. Almer, père et fils.	See paper prefixed.
21.	Aug. 12	<i>3rd ascent of Grand Pic</i> by same route.	P. Guillemin, A. Salvador de Quatre-fages.	P. Gaspard, père et fils.	'La Durance,' Sept. 22, 1878. 'Courrier de Lyon,' Dec. 7, 1878.
	Sept. 6	Attempt on Grand Pic, defeated by unsettled weather.	C. A. Moreing.	P. Reymond, P. Gaspard, fils.	'La Durance,' Sept. 22, 1878.

B. Time occupied on Ascent and Descent of Meije.

Stages of Ascent.	E. B. de Castelnaud, Aug. 16, 1877.		W. A. B. Coolidge, July 10, 1878.		P. Guillemin, A. S. de Quatre-fages, Aug. 12, 1878.	
	<i>Up.</i>	<i>Down.</i>	<i>Up.</i>	<i>Down.</i>	<i>Up.</i>	<i>Down.</i>
(1) From Gl. des Etaçons to M. Dubamel's Cairn . . .	1.15		1.35	2.35	1.50	2.15
(2) From M. D.'s Cairn to edge of Gl. Carré . . .	2.45	?	2.25	} 7.25	3	3.35
(3) On Glacier Carré . . .	45		45		55	20
(4) Last peak . . .	2		2.15	2.30	1.45	1.50
Total . . .	6.45	—	7	12.30	7.30	8
			19.30		15.30	

Heights of Stages of Ascent.	E. B. de Castelnaud.	W. A. B. Coolidge.	P. Guillemin, A. S. de Quatre-fages.
	<i>Mètres.</i>	<i>Mètres.</i>	<i>Mètres.</i>
(1) Starting point on Gl. des Etaçons	3,075	3,190	3,188
(2) M. D.'s Cairn	c. 3,455 (M. Dubamel himself, 3,580)	3,495	3,510
(3) Gl. Carré (south-west end) .	3,620	3,700 (point nr. Epaule)	3,754
(4) Summit (E. M. F., 3,987 m.).	4,000	4,040	4,075

THE MARITIME ALPS. By the EDITOR.

1. *The Coast Ranges.**

'Alpes Maritimæ proximæ sunt mari Ligustico; ab his Alpium initium sumunt veteres ferè omnes.'—SIMLER, *De Alpibus Commentarius*.

THE author of 'Aurora Leigh' has described in picturesque verses the strange sights which greet the traveller when day dawns on him as he speeds southwards in the night express from Paris to Marseilles. The poplar avenues, green orchards, quiet homesteads, low rounded hills, and trim river-banks on which he closed his eyes have given place to grey gnarled olives and cactus hedges, white flat-roofed farms and age-stained cities, abrupt red ranges and stony plains between which the Rhone rushes with southern impetuosity to the sea. The landscape might, at one moment, be in Africa, at another in Syria; it never resembles true French scenery.

Those who hurry on to Nice or Mentone have before them a day of splendid surprises—Marseilles, stately on her brilliant bay; La Ciotat among its fantastic crags, like some seaport in a Pompeian fresco; the broad fertile valley which leads back again to Fréjus, and the blue Midland Sea. There is still, however, something in store for anyone whose eyes are not wearied with so much beauty. As the train, suddenly leaving behind the red porphyry headlands and green glens of the Estérels, dashes past the ruinous castle of La Napoule, and across narcissus-strewn meadows, through which a bright trout-stream finds its way to the sea, the snowy Alps burst for the first time into view. Whatever the season, their silver heads shine against the eastern sky, soaring high above the village-crowned foot-hills, and contrasting vividly, both in form and colour, with the flat-topped tawny crest of the nearer range which shelters Grasse.

Again, after Cannes has been left behind, our eyes are drawn up from the rose hedges and wild tulip beds which fringe Golfe Jouan to the great range of snow, appearing, a sudden ghostly vision, above a low hill cloaked in ancient olive groves. The jagged mountain to the east is Mont Clapier; the comely pyramid in the centre seems to be the Cima di

* The Editor proposes to complete this paper, in one or two subsequent sections, by giving some account of the seaward valleys of the central chain, of the crest itself, and of the northern glens which open into Piedmont at Cuneo.

Mercantoura of maps. To the west, behind the rounded mass of Mont Mounier, a singular rock-peak rears itself into the sky. Both I and Mr. W. Mathews, who, as its conqueror, ought to know the great Italian Alp, thought we recognised in it Monte Viso. But the discussion of questions of topography may be postponed. The first feeling of most travellers is one of simple delight at a combination of sea and snowy Alp hardly to be seen again in such perfection short of the far easternmost bay of the Black Sea, where the voyager issuing from Batoum has on his right hand

*Καύκασον αἰπήνεντα Κνταίδα τε πρόλιον Αἴης.**

There is a foolish commonplace that off the mountains mountaineers have no eyes. Mr. Ruskin has more logically laid down, that having run altogether to leg, Alpine Clubmen have no eyes anywhere. But he then goes on to admit that ‘as soon as you can see mountains rightly you will see hills also and valleys with considerable interest.’

I assume that, as a body, we do see mountains, if not with the exquisite instinct of observation, and the still rarer faculty of recording with pen or brush the results of that observation, which give the author of ‘Modern Painters’ a place among the first of nature’s interpreters, yet with an appreciation which grows with years in every one of us, and is fostered, and has been in many cases created, by our walks and scrambles among the Alps. Believing, therefore, that we do see mountains rightly after our imperfect way, and accepting readily Mr. Ruskin’s second dictum, I shall not apologise for saying something of the lesser hills and valleys of the Provençal coast before I mount to the snowy Maritime Alps.

Cannes itself is well known to English readers.† It would

* The ancients, as a rule, paid little attention to individual summits. Monte Viso is, I believe, the only Alpine peak mentioned by name in the classics. It is curious therefore to find Arrian, in his report to the Emperor Hadrian on the coasts of the Black Sea, writing, ‘We had a view of Mount Caucasus, which is in height much the same as the Celtic Alps. A certain summit (*κορυφή*), called Strobilus, was pointed out where Prometheus is fabled to have been suspended by Hephæstus, at the command of Zeus.’ Strobilus is clearly Elbruz, whose blunt top resembles in shape a pine cone, whence probably its classical name.

† See Dean Alford’s ‘Sketches from the Riviera,’ Mr. J. R. Green’s ‘Stray Studies,’ P. Mérimée’s ‘Lettres à une Inconnue,’ and the local handbooks. Amongst these English visitors will prefer the ‘Guide to Cannes,’ by F. M. S. (London, Stanfords, 1878), which is excellent as far as it goes, and has a carefully compiled and corrected map.

be difficult to say anything new in praise or dispraise of the southern Torquay which has overgrown the quiet fishing village which ninety years ago sheltered De Saussure. It is a place of violent contrasts. We remember it by its life-giving, serene air, its exquisite land and sea, its rose, violet, and cassia gardens. But on the spot one cannot always close one's senses to certain drawbacks—architectural horrors in the shape of barracks for invalids, cockney-gothic castles or box-like French villas; scents, evil as well as good. Let the inhabitants look to their own interests. The drainage is notoriously bad, and the value of property along the sea-shore has already been seriously affected by it. The town councillors show their sense of the situation by spending all their spare money in building a new theatre!

There is much to be explored in the country near at hand. Immediately behind the hotels we may mount steep roads between villa gardens where the roses cover every trellis, and are not content until they have climbed high into the cypress-spires, to fall back again earthwards in spring in a cascade of white blossoms. Above the villas spreads the fir forest with its odorous, thorny undergrowth, where the naturalist may hope to capture a green frog in a pool, to come upon a company of poisonous caterpillars on one of their head-to-tail journeys; or, if sharp-sighted enough, to discover and dig out the exquisitely contrived nest of a trap-door spider. In a quarter of an hour we come to the terrace path beside the watercourse which winds round the hills to the chapel of Notre-Dame de Vie. For miles and miles we look out over swells and falls of waving olives and red terraced hills—a spacious, stately landscape. Close at hand Le Cannet, where Rachel died, ranges crescent-wise in its sheltered hollow; Mougins clusters on its airy hill-top; Grasse catches the sunlight on its high terrace; while opposite the purple capes and peaks of the *Estérel*s hem in the blue waters. If we cross over a spur, we shall come down upon the little basin (an old lake-bed?) of Vallauris, which supplies the clay M. Massier makes into pottery, which imitates and recalls the soft grey and blue colours of a southern sea on a day of wind and cloud.

No view on the whole coast surpasses—one only, so far as I know, rivals—the noble prospect from the lighthouse of Antibes. Above the broad purple Bay of Nice the land rises in three tiers of lofty hills. The lowest is half hid in a grey cloud of olive woods, jewelled here and there with bright towns set on the edge of the waves, or high on the hill-tops against the rich browns of the middle range, which shelters Grasse and Nice.

Above its bare and tawny slopes the golden snows of the Maritime Alps glow upon the horizon.

As we rest against the roots of the olives a brown figure, with a wallet and a violin, climbs up the paved chapel-lined track from the town. As he comes nearer I recognise in the old man with a musician's face the friar of the chapel hastening to play the vesper hymn on an organ he has framed with his own hands out of the great reeds of the country, and set up in the choir under the votive tablets which tell how many mariners have escaped perils by sea, from sudden squalls or English cruisers, through the grace of Our Lady of Antibes. Hence one may wander onwards, through corn-fields and olive-yards, past tiny white cottages with red-tiled courts, each overhung by its lemon or pomegranate tree, down to the bay, where the fishermen keep their boats, or the farthest cape, where the purple, white-crested waves break to pieces on the low reefs of rock; and wicked Monaco, hidden from every other point of the coast, peeps out like a witch behind the cliffs of Eza and Turbia.

I must not attempt to catalogue or describe all the landscapes which come back to my memory. There is scarcely a brow or dell within five miles of Cannes I have not rambled over, scarcely a peasant's olive-yard that I have not trespassed upon, and every one of these rambles left behind it some new and brilliant picture to add to my gallery of recollections.

Little to be pitied is the Alpine climber whom fate compels for a season to haunt the Estérel^s.* Their highest crag, it is true, only just surpasses 2,000 feet; but the summits, which, seen from Cannes, rise in a long undulating line against the western horizon, if hills in height are true mountains in character. On the first morning their outline seems perfectly beautiful; yet every day reveals fresh charms in its complicated simplicity. Three times above the blue bay of La Napoule the ridge rises and falls in graceful curves, then, after a wide sweep, springs up into a bold summit, like an Alpine crest taken off its pedestal, broken as it sinks seaward by tall spires. This is the Cap Roux, or Red Cape, a well-known landmark to mariners. Where the mountain is bare, the rocks are of red porphyry; where it is clothed, the covering is a dense growth of evergreens. Distance blends both into a purple bloom, which nothing but the fiercest mistral can destroy.

* Estérel^s is the local, Estrelles the common literary form, stamped with Mr. M. Arnold's approval in the line, 'Up the steep, pine-plumed paths of the Estrelle.'

The plain of the Siagne, five miles of alluvial level, separates the last hotel of Cannes from the ruined castle of La Napoule,* at the foot of the Estérel. The early train will carry us swiftly across it, and, after traversing by a tunnel the headland of La Théoule, land us at Les Trayas, a solitary house between the sea and the mountains. Exchanging a friendly greeting with the station-master, who leads a hermit-like existence, cheered by the occasional reversion of a Paris newspaper, we make our choice between the four footpaths which diverge from the platform. First let us ramble along the coastguards' path towards Cap Roux. No greater contrast can be imagined to the cliff paths of our native coasts. Here there is no swell of surging or moan of retreating tides, no boisterous breeze shifting ever from side to side and vexing the sad sea into grey, short, restless billows. The tideless main pours steadily its deep smooth swell into the echoing caves of the rocks. The waves are purple in the shadow, or above the dark seaweed beds, green in the pure sunshine; round the ruddy crags which lie out among the waters they break into bright columns of foam. The path is half buried in a thicket of fragrant bushes which form a hedge along the cliff—laurels, myrtle, arbutus, thick-leaved cistus, lit up in April with a galaxy of white stars, tall heaths with wax-like blossoms, prickly thorns. Where a cottage once stood fruit trees are in blossom. The stiff boughs of a fig tree are already, in February, tipped with jewel-like buds, which in a few weeks will broaden out into glorious leaf. The dry warm air vibrates with sensible waves of sunshine and sweet aromatic scents. Beside us a trickling brook flows out of a steep narrow glen, where it is soon lost to sight between rocky bluffs and tall fir-stems. Such must have been the sky and sea

‘That old-world morn in Sicily
When on the beach the Cyclops lay,
And Galatea from the bay
Mock'd her poor, love-lorn giant's lay.’

Lying along the turf and under the fragrant bushes, with the starry blossoms of the cistus dropping on one's face, it is difficult not to fancy the old world still young, the new world unborn. Even the huge bank thrown across the glen just where it becomes a bay is no stumbling-block to faith. May it not be the Cyclops's doing—a barrier to prevent the union of the sea nymph and her lover. That sudden roar and shaking of the mountain beneath us may be the giants' groan.

* In the process of being rebuilt and converted into an hotel, 1877.

All day dreams must have an end, and this one is cut short by the appearance of Polyphemus himself in the shape of the snorting engine of the Paris express, which dashes over the high embankment and recalls us rudely to the nineteenth century. Not altogether a bad century, however, since in thirty-six hours it brings shivering Britons out of their damp purgatory and enables them to enjoy for a space this healing paradise, if not as children who have lived only in the sunshine, yet with the more deeply-felt and cherished delight of prisoners escaping for a space from the gloom of their prison house.*

Beyond and westward of Cap Roux lies the quiet haven of Agay, a station without a hamlet, unless two or three scattered farms deserve the name. Landlocked on three sides by steep wooded hills, the sea touches the shore in a ripple which has the brightness of a smile and scarcely more motion. Two or three rude Mediterranean barks are moored off the shore. On the right rises a bold promontory crowned with a signal. Its steep sides are built up of ruddy rocks and fir-stems crowned with dark green leafage, between which glows the deep blue Mediterranean, flecked by white dazzling seagulls and a few distant sails. The great gulf of Fréjus spreads away to the distant lighthouse of Cap Camarat, embracing in its curve the headlands of the Montagnes des Maures and the shining bay of St. Tropez.

Turning my back on the sea, I followed one day the stream which filters through the sands of the beach, and found a broad valley stretching inland between the waste, pine-plumed heights. The water is shaded by a thicket of oleanders and aged cork-trees showing the scars of many flayings. Presently some tilled ground, a few animals, and a solitary house met my eyes. I fancied myself on the point of discovering Circe's retreat, and felt almost uncomfortable when a real pig introduced himself.

Hence paths lead back to Le Trayas or La Napoule across the hills. Under the landward side of Cap Roux stands the milestone which marks the line of the old Roman road. A

* Mr. J. A. Symonds has truly felt and eloquently expressed the Greek character of much of the mountain scenery on this coast ('Sketches from Italy and Greece'). On looking back at his paper I find I have, perhaps, laid myself open to a charge of plagiarism. I prefer, however, to leave the text as I wrote it. To describe the Estérelles without laying stress on the classical suggestions they call up would be to be false to the spirit of their scenery.

little farther is a spring draped with maidenhair and shaded by chestnuts, above which, in a hole in the rock, St. Honorat and many of his successors found an agreeable hermitage, and some fugitives in the days of the Revolution a hiding-place.

Here we are on classic ground for mountaineers. In April, 1787, just before his successful ascent of Mont Blanc, De Saussure explored the Estérel. He has left us a detailed account of the hermitage as he saw it, and of his ascent of the porphyry peaks above it. After describing the fountain, he goes on, 'Les jardins ne font pas moins de plaisir, et quoique le goût moderne reprouve tout ce qui est régulier, cependant un peu d'art et de symétrie fait un agréable contraste avec la brute et sauvage nature de ces montagnes; et les allées droites de ces jardins, placées en étagères couvertes de berceaux de vignes, et terminées par des niches creusées dans le rocher, firent sur moi l'impression la plus agréable.' The garden in the wilderness and its keeper have long since disappeared, and those who seek to climb the Montagne du Cap Roux must find their own way.

De Saussure, of course, did his duty as a climber. He took the hermit with him, not as guide, for the idea either of climbing or even naming the hill never seems to have suggested itself to the holy man. Consequently they first made for the western point, the tower-like Raou (Rocher) Dauphinier ('Latte,' De Saussure calls it). This rock looks formidable in the distance, but there is an easy though rough way to the top. The crest between it and the Montagne du Cap Roux is broken by a huge inaccessible rock-mass, the Grénier, and to get round this entails a plunge into a thorny thicket—'horribles broussailles,' the savant calls them—and the modern climber will use an at least equally strong epithet. Indeed, this new form of endurance may be safely recommended to those who cannot properly enjoy mountain scenery without suffering.

Seen from the western or Fréjus side, the range of the Estérel sweeps round in a semicircle from Cap Roux on the right to Mont Vinaigre on the left. A lower ridge runs across in a straight line, forming the string to the bow. Through this barrier the two sources of the Agay stream cut deep gorges. The northernmost escapes by a narrow doorway between two tall cliffs supported by bold buttresses, long spines of rock weathered into the most fantastic shapes. The eastern stream flows out of a much longer defile. For a mile and a half it runs through a narrow and tortuous cleft, where the clear deep pools reflect spires and pinnacles of red porphyry, or tall firs

rising out of a dense tangle of southern scrub. The upper end of the defile is guarded by two natural obelisks. Beneath them lies a tiny meadow, a solitary and romantic spot, hardly visited twice a winter from Cannes. The glen is known, according to the French Ordnance map, as the Vallon du Mal Infernal. A peasant belated among its weird crags might easily have fancied himself in enchanted ground. But have not the surveyors made a mistake? One of the peaks of the Maritime Alps is the Rocca Malivern, taking its name from an alp at its base. Here M. Joanne explains the derivation as 'Mal Inverno,' 'mauvais hiver,' which is, to say the least, plausible. But etymology is dangerous ground for the unlearned. A fellow-countryman lately proclaimed in my hearing that the Cornice road was named after a Mr. Cornish, the English engineer who constructed it.

The hills which hem in the glen are traversed in every direction by good paths cut at Government expense. We may cross back straight to Le Trayas by an easy and picturesque pass, or traverse either flank of the Montagne de l'Ours, descending at last to the farm of Maurevielle, by terraces running amongst groves of firs, arbutus, and evergreen oaks and cork trees, whose trunks, of a deep wine-stain hue, repeat the colour of the rocky tusks which break the hill-side.* In some corners, which have escaped the ravages of the fires that from time to time devastate the forest, the trees attain great size. Everywhere there is the same odorous undergrowth, woven of tough thorns, myrtle, and cistus. In this winterless land December only adds a touch of brightness to the evergreen thickets by hanging the arbutus with scarlet berries, which mingle with the tiny cream-coloured blossoms, a symbol of the union of autumn and spring. As we return eastwards we face the broad-backed hills of Vallauris, from which the Cap d'Antibes stretches out like a green sickle into the sea. In the distance the ranges beyond the Var glow ruddy against the sun, and high in the sky soar the white summits of the Maritime Alps, the wall of Italy, the watchman on whose shining battlements looks across to Turin and Monte Rosa.

* In the French Ordnance map a singular error occurs in the delineation of this part of the chain. The head of the valley of Maurevielle is destroyed, and a fictitious western branch of the glen of the Rague substituted in its place. None of the paths and cart-tracks of the Estérels have been put into this map, which was engraved some years ago, and does not appear to be kept up to date even as to high roads, e.g. the road from Grasse to Vence.

Unless a carriage picks us up at La Napoule, we must (to avoid the circuitous and dusty high road) cross the railroad bridge over the Siagne, and walk home through the narcissus meadows and the stone-pine grove, or along the sands, watching the sunset colours slowly fade from sky and sea until all is dark below, and the faint glow in the upper air is reflected only where a long bar of light marks the wet stretch of sand left by the last advance of the quiet waves.

Day after day one may wander among the seaward slopes and hidden glens of the Estérelles without meeting a human being. The intense solitude is rarely broken even by the cry of an animal or a bird. Life seems to be concentrated in what are called inanimate forms of nature—the murmuring brooklet, the rough-limbed mountain, the dancing air, the laughing sea. All these become so vivid and palpable as separate existences, that it is quite natural to fall back into a Greek frame of mind and to accept the fair old Greek embodiments.

But if half the Estérelles is, except to a few old Cannes residents, an unknown desert, their highest summit, Mont Vinaigre, is a household, or rather a *table d'hôte*, word to visitors. It serves them as a frequent excuse for their favourite form of recreation, a gigantic picnic party, at which a dozen to twenty people talk, unpack, eat, pack, and talk again; and the only thing forgotten is the scenery.

The mountaineer must not, however, abandon Mont Vinaigre because its solitudes are now and then rudely broken in upon. Besides the post road to Fréjus, which traverses one of the shoulders of the mountain within three-quarters of an hour's walk of the top, he may find plenty of picturesque bypaths to the signal which crowns the highest of a spine of bold porphyry crags. If he is an enthusiast for moonlight and sunrise, there is even a natural cave where he may pass a weird night in dreaming of the brigands or wild boars who used to haunt the neighbourhood.*

From the top there is a most noble and delightful view over the coast country of Provence from Draguignan on its high hill-side to Nice on the spacious bay—the true Garden of the Hesperides, set between the blue sky and bluer sea. The mountain itself supplies as foreground a tangle of rocks and pines and cork trees, such a scene as Salvator Rosa sometimes indicates with a dull eye and rough brush, which miss all but

* 'L'Auberge des Adrets,' a once well-known French melodrama, takes its name from a hamlet close at hand.

surface effect. The charm of the panorama lies in the perfect definition of picturesque details and local colours in the white towns and hamlets, pine groves and meadows, high crags and olive-clad plains, sea gulfs and vessels, all spread out over an immense field. The mysterious, vague sublimity of a great mountain view is absent. In place of one overpowering effect, we enjoy a multitude of incidents perfectly combined into an harmonious whole.

The first time I stood on Mont Vinaigre I was witness to a very singular and suggestive vision. The morning had been bright, but as the day went on a gray pall, portending rain, had risen in the west and slowly stretched overhead, blotting out all the fair colours in land and sea, and blurring the delicate features of the wide landscape. But above the Var valley some counter air-current kept the clouds in check, and on the eastern horizon the snow peaks shone forth against a pale blue sky, pure and brilliant, so that one might fancy them a row of great white-winged angels looking out from their untroubled heaven on the dark plains of earth.*

There is a neighbouring height, the view from which rivals, perhaps surpasses, that from Mont Vinaigre. The Tanneiron is comparatively a tame hill. Clad below in steep pine-woods, it broadens out towards the top into wide, sunny spaces, where vines and fig trees flourish. On the highest crest—tell it not

* The following hints may be of use to a good walker in the Estérels. I assume he has provided himself with the Ordnance map, to be bought at Nice or Paris (Librairie Dumaine, 30 Rue et Passage Duphot):—

1. By rail to Le Trayas station; take path from Cannes end of platform, which leads up to gap N. of the M. de l'Ours; follow path round its sea face to gap at its opposite base, and descend through the Vallon du Mal Infernal and by the banks of the Grenouiller to Agay.

2. Ascend Cap Roux from Agay by hermitage of St. Honorat, descending directly to the sea-coast path, and following it past Le Trayas and round the Pointe de Théoule. The view from the coast-guard station on the cape looking over the bay of La Napoule, with Cannes, Grasse, and the Iles de Lérins in the middle distance, and the Alps (and sometimes Corsica) on the horizon, is one of the most exquisite and perfect on the coast. This point, though only half an hour's walk or ride from La Théoule, is seldom reached by Cannes excursionists.

3. From Agay walk to gorge under the Serrière des Partus. Then take the path which climbs through the rocks on its N. side and follows the ridge to Mont Vinaigre; ascend Mont Vinaigre and descend to the pass at its E. base; follow the roads and paths which keep close to the watershed as far as the cart-road which crosses the path S.E. of the Signal du Marsaou; descend by this to the Fréjus road.

in the Alpine Club—stands a cottage. A rough cart-track mounts from the bridge over the Siagne on the Fréjus road to the top, and a terrace path, commanding the most lovely views of Grasse and its gardens, follows the long back of the range to a pilgrimage church, whence it descends to the bridge above Auribeau, or by a shorter cut, which, unless the miller's punt is at hand, may involve wading the Siagne, to the village itself.

Below Auribeau, a hamlet clinging round the top of a steep hill, the river, here dammed up into a broad, tranquil stream, flows for half a mile through a picturesque dale. Steep banks clothed with firs and cork trees, and lit up in April with golden broom and white-starred cistus-bushes, hem in meadows and willow-fringed watercourses which might have been brought straight from the valley of the upper Thames.

When the Estérel's have yielded up all their secrets, when we know all that lies between the walls of La Napoule and the stone pines and ruined arches of Fréjus, the scattered villas of the quiet French watering-place of St. Raphael, and the beacon crag of Agay, it is time to turn northwards.

Behind Grasse, some fourteen miles from the coast, a long range rises abruptly in a continuous line, closing in the horizon of all views near Cannes. The slopes are only powdered with snow for a few days in winter; but the highest crest is outlined with a thin white edge long after the sheltered sunward face is bare. Below the hills are grey with olive groves. The bare rounded tops take a fresh colour in winter with every change of light—now the pale amber of Egyptian ranges; now, like Scotch hills, blue and grey under passing shadows.

In the centre, under the snowy crest just spoken of, the long uniform wall is broken to its base by a deep cleft. Two huge opposite cliffs throw their shadows, morning and evening, across at one another. This is the gorge of the Saut du Loup.* The crest is the Cheiron (5,813 feet), the highest summit in the block of mountains between the Var and the sea.

The road to the hills leads past Mougins, perched on its airy hill-top, through Mouans, where under the ancient olive stems

* The 'Saut du Loup' is a phrase constantly in the mouths of visitors to Cannes. But what natural feature it refers to they cannot agree. Some say—and this is the most plausible explanation—that it refers to the waterfall of the river Loup, which makes several bold leaps in the bottom of the gorge. The author of the 'Visitors' Guide to Cannes' makes it out to be the cascade of the stream which falls from Courmes. A third party maintains that the name immortalises a wolf who leapt over the cliff of Gourdon! There can be little doubt, I should think, that the first derivation is the true one.

the anemones burst forth in March like a troop of Mr. Doyle's fairies, of every hue and size, from the modest purple star to the blazing scarlet sun-anemone, a firework of a flower. Then it mounts the long hill-side to the town of Grasse between terraces which in April are a staircase carpeted with wild hyacinths and daffodils.

Grasse hangs on the steep slope looking out to the distant sea in a position resembling in some respects that of Broussa, while its steep narrow streets recall Siena. The town has still an air worthy of the ancient Provençal republic, which was alternately the ally of Pisa and of Genoa, as the politics of its rulers swayed from Ghibelline to Guelf. It has a heavy twelfth-century cathedral, and had until last winter a promenade shaded by noble plane-trees. Some barbarous official has laid his axe to their roots. When last I saw them the noble old trunks were prostrate, and, sound to the core, gave the lie to the plausible bystander who suggested they had been condemned as dangerous. I am bound to say he only added this excuse in consequence of the scorn with which I had received his previous suggestion that new trees would be prettier. Yet Grasse calls itself artistic, and holds fêtes in memory of the native painter Fragonard, famous for his questionable nymphs and goddesses.

Beyond the gate of Grasse the Vence road runs along a terrace high on the hill-side; bare rocks rise above; below, swells of fir and olive, broken here and there by tall cypresses or a white village church, stretch away to the blue bay of La Napoule. After a low brow has been crossed the scene changes. Neighbouring hills cut off the views towards the sea, and the road enters the valley of the Loup. Sweeping round deep hollows in the hill-sides, the haunt of primroses, it approaches Le Bar, a large village with an old church which contains a fifteenth-century altarpiece of the Tuscan school. From the terrace close at hand the gorge of the Loup is first seen. Two tremendous headlands of golden limestone front each other. The rocks fall in precipices of between 2,000 and 3,000 feet into the great chasm.* On a half-way shelf on the brink of the cliffs stands Gourdon, a hamlet of refuge in the old times.

The high road leading to Vence descends rapidly amongst

* The bridge of the high road (not shown on the Ordnance map) is about 550 feet above the sea-level; the shelves on the top of the lower cliffs, along which the roads to the hamlets on the uplands pass, 2,860 and 3,340 feet respectively.

olives to the river-side, to mount again by a long ascent to Les Tourrettes. We leave it at the bridge, and follow a footpath which, stealing up on the right bank between orange gardens and violet beds, climbs to the very base of the wall of crags.

After creeping for some distance under the rocks, and crossing numerous gullies full of dripping maidenhair, the path comes back to the stream, where it is tightly grasped between the huge precipices of red rock. A deserted mill is passed on the opposite bank. A little higher the path crosses the river. At this point picnic parties are stopped by a skeleton bridge. The stream roars below, and from rock to rock, a distance of perhaps 10 or 12 feet, three poles extend, the faggots and earth which were once laid on them to form a pathway having long since fallen in. Last year, however, it was an easy matter for anyone not too proud to crawl to get across by the boughs.

The few who venture over find themselves in the heart of as wild and romantic a chasm as can be met with in the Alps. Broken cliffs, only here and there giving scanty goat-pasture, spring straight from the water-side. A few chestnuts cling to the crags. So narrow is the cleft that a mere strip of sky is visible overhead, against which, looking back, the great rocks forming the portals of the gorge throw out their bold outlines. Deeper in the defile there is no more room for the path, which passes along a gallery carried round the face of a crag overhanging the stream. This gallery I found much in the same state as the bridge—that is to say, only a few withes remained, bound to iron stanchions in the rock. These, however, could be wormed over by a light weight. Beyond this *mauvais pas* a stream tumbles in a great leap across the path coming down from Gréolières, a hamlet 2,000 feet overhead. At last the track abandons the river, and a rude staircase in the limestone rock, which anyone unaccustomed to mountains might very easily fail to notice, leads up some 300 feet to a brow whence all the height and depth of the abyss are seen at a glance. A path, easy except for those subject to giddiness, traverses the face of the cliffs, passing at one place under a waterfall.

The gorge is now left behind, and the upper valley opens before us. In winter it is bare and brown. The few scattered cottages are connected by horse-tracks. A new road running to the village of Cipières keeps high along the western hill-side. It is useless to those making for the Cheiron, who must keep close to the water on its (true) left bank as far as the point where the valley of the Loup turns due west, and a road leads up a side glen to the right to the high plateau of Coursegoules.

Following this for a hundred yards, and passing close to the hamlet of St. Pons, I began to climb the great face of the Cheiron, conspicuous from the hills near Cannes. The next two and a half hours were devoted to steady treadmill work up very steep grass slopes, broken only for a few minutes midway by a cultivated shelf. A little more than halfway up the ascent of 4,000 feet I turned round for a moment to rest. A high snowy range, very clearly defined, with peaks shining in rosy light and pearly shadows in its hollows, had risen above the ridge behind me, itself 3,500 feet high. I had to think twice before I could convince myself that no Maritime Alp could possibly have got so far to sea, and that these substantial snow-peaks were the same I had seen from lesser heights as semi-transparent ghosts floating in haze above the watery horizon, the mountains of Corsica.

Time was running short, and I could not afford to halt. At last I was up to the level of the cliffs seen from the hills behind Cannes. To be able to use hands as well as feet was a delightful relief in the long uphill strain. I took the steepest rock I could find, and indulged my scrambling instinct. A short gully led up between two crags. As I reached the crest I was met by an icy blast which nearly knocked me back again. A few steps to the right and I was on the top of the Cheiron, under the lee of a big ruined signal, erected, no doubt, for trigonometrical purposes. It was late in the afternoon, and the sun was low in the western heavens. A wider view I had never seen even from the greatest heights. The sky was already deepening to a red winter sunset. Clouds or mountains threw here and there dark shadows across earth and sea. The Estérelles had sunk to a cape of the size of Beachy Head. Far beyond them stretched the coast of Provence. The great Gulf of Fréjus was spread out with all its bays and capes. Beyond it, over the Montagnes des Maures, as the old Burgundian provinces are seen from Mont Blanc over the Jura, the long land-line receded northwards towards Toulon, broken where the Iles d'Hyères lay apart from the land.

Far out at sea Corsica burst out of the black waves like an island in flames, reflecting the sunset from all its snows. From the sea-level only its mountain-tops, and these by aid of refraction, overcome the curvature of the globe. From our height we seemed to see down to their roots, the capes which break the waters.

The back of the Cheiron itself is a broad pasturage, partly wooded, covered in summer with flocks and herds and vocal with shepherds' songs. Now it was a howling wilderness

of snow and ice. That way lay winter. I had climbed the great screen which, like the mountain-wall of a fairy tale, protects the lemons and palms of Provence. In front was the country of the north wind. It was strange to turn the head from the fertile coast studded with bright towns to the white leagues of frozen hills which stretched one beyond the other towards Gap and Grenoble. If the knife-edges of Dauphiné were in sight, they were indistinguishable from lesser snow-clad heights. Elsewhere the horizon confirmed my impression that there is little attraction for the mountaineer in the Basses Alpes.* The familiar peaks of the Maritime Alps still remained by far the most striking features of the mountain panorama.

It was not, however, a view in which one cared to linger over details or was eager for the recognition of localities. The overpowering effect of the vast weird landscape was due, not to any individual feature, but to the general expression. Placed in solitude under the influence of this lurid sunset on the high desolate hill-top between the snows and sea, the most matter-of-fact tourist could hardly think for long of such small things as hills and gulfs and cities. One felt brought face to face with a mighty struggle between the principalities and powers of nature, a strife in which night and winter were allied against day and summer, and were on the point of gaining the mastery. As the sun sank redly in the west, the sea grew more and more grey; the flush died off the Corsican heights and left them wan ghosts on the edge of the world; the last gleams faded from the warm green shores and the red promontories beyond Nice; the icy blast from the leagues of northern frost and snow shrieked past with an even fiercer howl of triumph, as if about to seize on the last strip of sun-protected land underfoot. The dramatic force and mystery of such a scene are familiar to most climbers; they can scarcely be conveyed to those who are strangers to high mountains.

Having lingered as long as the swift approach of darkness would permit, I slid over the snow-slopes on the N. side of the mountain to a gap a quarter of a mile E. of that which I had mounted through. My descent might be summarised in an alliterative line familiar to youth. By a run down the rugged rocks I succeeded in reaching, with ragged clothes and knuckles, but otherwise unharmed, a good path just before

* The Lac d'Allos and Mont Pelat (10,016 feet), S. of Barcelonnette, will probably best repay a visit in this region.

dusk. It crossed a watershed, and then circled round the slopes to the large mountain village of Coursegoules, where I arrived in pitch darkness at about 6.15 P.M., in 1½ hour from the summit.

The village inn gave me a partridge for supper and a comfortable bed. At an early hour next morning I set off by moonlight to return to the sea coast at Cannes. The road lies across wild, silent downs, alive in summer with shepherds and shepherds' songs. Often, I was told, they sit on neighbouring hillocks and chant alternate strains to the music of their pipes. At last, as the east whitened, and the full moon paled in the western sky, I saw from the outmost folds of the hills the wide sea-spaces, and dropped by steep zigzags down a barren gorge, and past an old castle of the Templars to the ancient town of Vence and the orange-girt walls of St. Paul.

There is another gorge in these hills which well deserves a visit. The water which supplies Cannes is brought in an open aqueduct, over twenty miles in length, from the Siagne near St. Césaire. This village lies some ten miles W. from Grasse on the first shelf of the hills. It is approached by a road across a bare plain so thoroughly Syrian in character that one finds oneself involuntarily looking out for camels and a domed Moslem tomb. You may enter it and walk about its streets without further discovery, unless chance leads you to a terrace a few yards behind the church. There you find that the whole village is built on the brink of a great chasm. Far below (1,500 feet, I should say at a rough guess) the clear stream of the Siagne, newly born out of great caves in the hills two or three miles higher up, flows at the bottom of a steep-sided glen, cultivated wherever the cliffs allow it. The olive groves pour down to the bottom in a great silver-green cascade.

The aqueduct which feeds Cannes draws its supply from the stream a mile or two higher up. By a little scrambling it is possible to follow it in the opposite direction, looking down on the still green pools, the sparkling shallows, and high arched bridges of the Siagne, and the clusters of sun-stained buildings—mills or farm-houses—which gather beside the stream. The high road from Grasse to Draguignan is joined close to the wide-spanned arch which marks the frontier of the Alpes Maritimes and the Var departments.*

* An interesting walk I did not take is to follow the line of the Roman aqueduct from the Siagne to Fréjus, about twenty miles. (See F. M. S.'s 'Guide to Cannes'.)

Here, before leaving the mountains of the coast and turning inland, I may add a few lines on the view-points of Nice, Mentone, and San Remo; Mont Chauve, the Berceau, and Monte Bignone.

The Mont Chauve is reached by the charming country road which leads to Aspromonte, and it is easy to descend from it to St. Martin le Var or Les Tourrettes on the Lantosca high road.

The double-headed point of Le Berceau seen from Mentone is from below one of the most tempting of Mediterranean mountains, and nothing can be more beautiful than the lower part of the walk, whether the ridge track to Castellar or the footpath through the Val di Mentone, a bower of orange and lemon groves, is taken. Perhaps the best route is through Castellar and up past the old eagle's nest of Castellaras, now in ruins, reaching the gap between the two points of Le Berceau from the N., and descending by the seaward face. The view, however, is not equal to that from most of the coast mountains, being confined in many directions by ranges close at hand; nor is it improved by following the ridge inland to the higher Gramont, the culminating point in this neighbourhood.

Far more beautiful is the San Remo mountain, Monte Bignone. The ordinary path by San Romolo, however, should be avoided. A preferable track winds through vineyards to the chapel of San Pietro and the Croce di Fara, and then climbs a spur of the mountain. At first it is bare, and the clay strata, turned up vertically to the sky, look like the ribs of a famished monster. Above spreads a great pine forest, in which it is easy to miss the way, but difficult to lose it badly if the obvious rule of going always uphill is observed. The top of Monte Bignone is a long down broken by beech copses, sloping gently for some distance seawards, precipitous on the N.W. face. It commands a most romantic view over a landscape Italian in every detail. The wide basin of the Nervia spreads out towards the snowy Alps; steep-sided ridges, crowned by the brown houses and white campaniles of walled hill-villages, divide narrow winding glens. On the other side the chestnut forests of Ceriana are seen, but the town itself, one of the most picturesque in Italy, is hidden.*

* There are obvious traces of ancient entrenchments on the summit of Monte Bignone, of which I have found no explanation. The top of the neighbouring and lower Monte Caggio is a huge pile of stones, which appears to have been heaped together by human agency.

It is easy to descend from the top to the pilgrimage church of San Romolo, whence a paved path leads down directly to San Remo. A good walker will prefer to follow a terrace road which runs along the face of the hills to Ospidaletti; by turning off it above Signa, San Remo may be gained by that village. A still more charming descent is found by crossing the backbone of the hills and following the crest of the spur which ends in the Cape of Bordighera. The views looking westwards from the neighbourhood of that village are perhaps the most perfectly romantic on the Riviera, and, if the hotels were anywhere but in the ugly Marina behind the railway station, Bordighera would probably before this have become one of the most frequented health-resorts of the Mediterranean coast. The neighbouring scenery shares with that of Cannes two qualities wanting among the romantic glens of Mentone or the quieter hills of San Remo—spaciousness and variety in character. The bottom of a valley ringed by impending hills, even though it open on the sea, cannot—at least to my taste—compete as a place of long sojourn with a spot which presents landscapes at once bold and broad, varied in themselves and capable of infinite variety of expression, according to season and weather, and crowned by that most beautiful and suggestive of all natural objects a distant snowy chain.

THE CONGRESS OF ALPINE CLUBS AT PARIS IN 1878, AND FÊTE AT FONTAINEBLEAU.

At the congress of the French Alpine Club which took place at Grenoble in 1877, resolutions were passed 'that there should be but one international congress per annum, to be organised successively by the French, Italian, Swiss, and German clubs,' and 'that henceforth the congress should be held in the mountains and not in a town, an exception, however, being made in favour of Paris in 1878, on account of the Exhibition.' Probably the wisdom of the former of these resolutions is sufficiently apparent, and the writer of these lines, at any rate, has no cause to regret the exception that made Paris the centre of the festivities of the past year.

On September 6, 1878, the congress was opened, not at the Trocadero, as was originally intended, but at the palace of the Tuileries, when M. Adolphe Joanne, the esteemed president of the French club, delivered a carefully prepared and animated address upon the subject of 'Alpinism.' M. Talbert, V.P. of the French club, followed with an account of Alpine reunions at Lauteret and Interlaken. M. Le Colonel Goulier addressed the congress on the use of mountain barometers, and M. Charles Durier introduced an ingenious theory of the passage of the Alps by Hannibal.

On the 7th the congress was continued. It was addressed by M.

Schrader 'On the Alps as a Teacher of Youth,' and the speaker's remarks were received with great applause. M. Schrader is one of the most active and intelligent of French mountaineers, and has made many valuable contributions to the 'Annuaire.' A general discussion then ensued, in which M. Cesare Isaia, Mr. Budden, M. Freundler, president of the Swiss club, M. Binet-Hentsch, its vice-president, M. Talbert, and M. Durier took part, after which the congress broke up, the members, no doubt, being highly satisfied with the effective discharge of their duties, but looking forward, as I ventured to think, with a still keener interest to the various public and private hospitalities which awaited them during the ensuing week.

On September 10 the fête of Fontainebleau took place, and although a slight summer fog greeted the 200 excursionists who presented themselves at the Lyons railway station at 7.45 a.m., it was felt by everyone that a fine day was in store for them, and spirits rose accordingly. At the station at Fontainebleau every kind of vehicle known to the wildest imagination was found to be in waiting, and the joyous caravan set out in the direction of Franchard, where a great breakfast was spread under the trees. The sun broke out as the breakfast concluded, and the rest of the day was occupied, under a cloudless sky, in making different excursions in the charming forest; all parties being warned to be at the palace as soon after five as possible, as the banquet was fixed for six o'clock precisely. The first groups returned soon after four, and amused themselves by walking about the gardens, or by throwing pieces of bread to the carp, or by listening to the eminent Mounet-Sully—himself a member of the French club—who recited with great effect 'Les pauvres Gens' in the charming little theatre of the palace. At six o'clock the banquet was served in the Great Gallery of Henry II. This magnificent hall was placed at the disposal of the French president by the Minister of Public Works, as a mark of his interest in the objects of the meeting. The hall was illuminated by hundreds of candles, and the whole effect was magnificent. The great oriel windows looked out upon the gardens and the park, and a moon nearly full rose to brilliance as the dinner proceeded.

M. Joanne, of course, was in the chair; on his left were the presidents of the English and Swiss clubs, Senator Torelli, of the Italian club, and the Mayor of Fontainebleau. On his right were the prefect and sub-prefect of the Seine and Marne and the leading members of the central committee. The Italian club was in strong force, being represented by more than thirty of its members.

The menu was tempting and the dinner superbly served. The band of the 11th Hussars discoursed excellent music from the garden. M. Joanne, who was received with vehement applause, returned thanks to the sun for his brilliancy, to the Minister of Public Works for the use of the banquet hall, and to the administrative civil and military authorities for various services rendered by them, and then drank to the prosperity and increasing union of all European Alpine Clubs. M. Patinot, prefect of the department, returned thanks for the Government, and M. Meunier, the mayor, for the town.

The healths of England, Switzerland, and Italy, and of the presidents

of their respective clubs, were then proposed by M. Foucher de Careil, senator and one of the founders of the French club, and in an amusing speech, in which he described England as the school of all the liberties, he mentioned the right which each Englishman reserved to himself of breaking his own neck as one of the most dearly prized of the many blessings conferred by the Habeas Corpus.

The English president returned thanks for the European clubs, and received a most flattering and gratifying reception. The Swiss president (also very cordially received) returned thanks for Switzerland, and after a few more speeches the whole audience adjourned to the gardens, where a magnificent display of fireworks was expressly provided for them by the municipality of Fontainebleau. A hasty rush was made to the station, where the Marseilles train was stopped for our accommodation, and with noise and laughter we searched for our carriages under the severe eyes of three dignified Arab chiefs, *en route* from Algiers to Paris, who appeared to regard the whole of our proceedings with unmingled awe.

Too great praise cannot be given to the committee of the French club for the excellence of all the arrangements for the convenience and comfort of their members and their guests. Every contingency was foreseen, and there was no hitch in the proceedings from the beginning to the end.

The congress and the fête appear to have excited considerable interest outside the usual Alpine circles.

Interesting accounts of the proceedings appeared in the 'XIX^{me} Siècle,' in the 'Républicain,' in 'La République française,' and in other papers, and a cartoon of the banquet scene, and sketches of the principal points of interest in the forest of Fontainebleau, appeared in the 'Illustration.'

So far I have set down simply the official proceedings in connection with the congress and the fête; but the writer of these lines desires to bear his testimony to the unvarying courtesy, the profuse hospitality, the sympathetic kindness, which the representative of the English club received at the hands of his French brethren.

Shall that charming little dinner at M. Joanne's be forgotten, over which Madame Joanne so gracefully presided, after which a merry party smoked innumerable cigars in the balcony overlooking the gay gardens of the Luxembourg? or that sumptuous banquet of eighteen covers at Vefours which the Marquis de Turenne gave to the more prominent members of the various clubs, and over which he presided with such unaffected simplicity and courtesy? or that genial breakfast in the Quartier Latin, presided over by the accomplished René Fouret, of the firm of Hachette and Co.? or shall I recall the railway journeys in the sewers, or the wanderings in the catacombs, under the guidance of the gentle M. Lemercier, or the many other places of public interest to which our kind friends procured us so ready an access?

Well, there are no hosts more charming than cultivated Frenchmen; such courtesies as I received, whilst I fear they are difficult to repay, can never be forgotten, and I am glad to take this opportunity of holding out to the many friends I made in Paris a grateful and a kindly hand.

C. E. M.

MOUNTAIN EXCURSIONS IN GREECE.

ASCENTS OF MT. DELPHI (DIRPHE), IN EUBCEA; MT. LYKERI, EAST PEAK (LYCOREIA), THE HIGHEST POINT OF PARNASSUS; AND MT. ZIRIA (CYLLENE), WEST AND HIGHEST PEAK, THE HIGHEST SUMMIT, AFTER TAYGETUS, IN THE MOREA.—On May 9, 1878, Messrs. F. E. Blackstone and F. F. Tuckett left Chalcis, in Eubœa, and, after a leisurely ride (on mules) of five or six hours through scenery of constantly increasing beauty, reached the upland village of Steni, at the south foot of Dirphe, at a height of nearly 1,500 feet above the sea, and close to a brawling mountain torrent, which probably diminishes considerably in volume later in the season. Here they passed the night in excellent quarters, and at 5.10 the next morning started for the ascent of Mt. Delphi, as it is called by the modern Greeks. About 750 feet (by aneroid) above the village the path enters a noble forest of gigantic old chestnuts, which cover the mountain-side for a height of some 1,250 feet, the superior limit being 3,450 feet above the sea, lovely views of which, and of the mountains surrounding the plains of Bœotia beyond it, were disclosed at every turn. The chestnuts were succeeded by pines, extending upwards for about 300 feet, and, just beyond the line where they ceased, a col was reached which connects the highest peak of Dirphe with another summit—Xero Vuni (4,692 feet)—to the S.E. From this spot—attainable by mules—there is a grand view, on the farther or north-eastern side, into the head of a magnificent gorge or valley, in which is situated the village of Stroponæs, probably well deserving a visit, and serving as a point of departure for the ascent of Dirphe to anyone approaching it from the direction of Koumi (Cumæ), a port on the east coast of the island, a colony from which is said to have founded its more famous Italian namesake. Turning sharp to the left along the dividing ridge, a second and lower col (about 3,600 feet above sea-level), immediately at the foot of the final southern slope of the mountain, was reached, and, there being a spring of excellent water—the last obtainable—close at hand, a halt was called about 7 o'clock. The time to this point had been one hour and three quarters, the pace being very easy. Nothing could be more simple or direct than the remainder of the ascent, which was straight up, at a rather high angle, over broken, rocky ground interspersed with patches of grass; but, as there was no occasion for hurry, and every inducement under a broiling sun to linger and enjoy the exquisite and momentarily widening view, not much less than two hours were consumed in attaining the more easterly of the two summits. This is slightly exceeded in height by its western neighbour, which last was reached at 9.45. Between the two, and on opposite sides of a ridge connecting them, there were two small crater-like depressions, in which were growing grass and flowers amid patches of unmelted snow; but though these and the peculiar outline of the mountain may have suggested the idea to some minds of a volcanic origin, no evidence whatever was observed to justify such a theory.

Light clouds at times drifting over the summit somewhat obscured the view whilst adding to its charm, and, though Olympus could not

be distinguished, Cyllene, Helicon, Parnassus, Oeta, Othrys, Pelion, the Gulf of Volo, the whole of Eubœa from Mt. Oche to the Straits of Artemisium, the course of the Euripus, Chalcis, Pentelicus, Hymettus, Parnes, Cithæron, and Bœotia were all visible. The following plants in flower (kindly named by G. C. Churchill, Esq.) were collected on the summit by Mr. Tuckett: *Crocus nivalis*, *Viola poetica* (?), and a *Fritillaria* of doubtful species.

According to the map of the French Etat-Major the height of Dirpbe is 1,745 mètres, or 5,725 English feet. Mr. Tuckett, who was provided with two boiling-point thermometers and an excellent aneroid, obtained rather higher results, viz. 5,773 and 5,845 feet respectively, by comparison with his kind friend Captain Mansell's barometer at Chalcis, and with readings at Athens most obligingly communicated to him by Dr. Julius Schmidt, the well-known director of the National Observatory. The mean of the two boiling-point thermometers at 10.30 A.M. was 94°·22 C. (equivalent to a pressure of 615·67 mm.), with which the aneroid showed the close agreement of 615 mm., the air temperature in the shade being 11°·7 C. Captain Mansell's barometer (20 feet above sea-level) at 9 A.M. stood at 756·31 mm., with an air temperature of 21°·7 C. Dr. Schmidt's instrument (360 feet above the sea) at 10·30 indicated a pressure of 748·47 mm., with an air temperature of 24° C.

At 11.45, after two hours' enjoyment of the glorious panorama, the descent was commenced, and the spring reached in three-quarters of an hour by the help of some glissades down snow-slopes to the east of the line of ascent, and the village in one hour and three-quarters more of very leisurely going. The start thence being delayed till 4 P.M., darkness came on before Chalcis was reached at 9.45.

The same party, after visiting Thermopylæ, Salona (Amphiassa), and Delphi, slept at the large and beautifully situated mountain-village of Arachova, or Rhakhova (Anemoria?), 3,232 feet in height, commanding a superb view of the peaks of the Morea beyond the Gulf of Corinth. At 3.30 A.M. on May 16 they started in brilliant moonlight for the ascent of Mt. Lykeri, the highest point of Parnassus, accompanied by a shepherd as guide. An easy ascent of one hour brought them to the summit (4,200–4,300 feet) of a ridge W.N.W. of the village, and about 1,000 feet above it, which forms the southern boundary or rim of an extensive crater-like upland plain lying to the west of the principal summits of Parnassus, and stretching away for several miles in the direction of Delphi, where it terminates abruptly in the grand cliffs of the Phædriades. Large portions are cultivated and produce corn, and on it are three lakes and two 'kalyvias,' or summer villages, belonging respectively to Arachova and Kastri (Delphi). Both of these, as well as the site of the famous Corycian cave—to reach which involves a detour of two or three hours—lie to the left of the track for the ascent of Mt. Lykeri, which, after descending about 200 feet on the northern side of the ridge, skirts round the eastern bounding slopes of the plain, at a slight elevation above it, and, alternately rising and falling, next climbs rapidly through fine pine-woods to a more bare and elevated plateau, from which the views between the partly pine-clad

spurs and *mamelons* of rock are exquisitely beautiful and picturesque. A solitary shepherd's hut (*ποιμενος*, pronounced 'peémino,' the *ς* being dropped), made of rough pine-boughs, and open in front, was passed on the right, at which during the descent a halt was made, and bowls of delicious *διαουρη* (pronounced 'theeaortees')—sheep's-milk junket, slightly sour—were most hospitably supplied by the inmates, and proved very refreshing.

At 7.15, after a short halt for breakfast, a steeper portion of the ascent was entered on, and, after about half an hour's progress in an easterly direction, during which the highest shepherd's hut was passed, a snow-filled basin or valley was reached and traversed, a ridge at its head and a second basin crossed, and then the final peak attacked. The pace having been very leisurely, and some step-cutting having been necessary, or at least desirable, the actual summit was not reached till 10.20. Ten minutes previously, whilst halting on a rock in the snow, a rather smart earthquake shock was felt, a novel experience in mountaineering, and one which in the Alps would be a fresh source of danger, the more serious as its occurrence could never be foreseen and provided against, and the avalanches of ice, snow, and rock which it would probably occasion might take place when the position of the climber rendered retreat or shelter impossible. 1½ hr. was spent on the summit in making observations and studying the wonderful view, which is not only of great beauty and grandeur, but, in the historic interest of its details, certainly unsurpassed by any in the world. To the south Taygetus was clearly distinguished, and reared itself up most grandly, and nearer, in a line from east to west, lay the summits of Cyllene, Chelmos, Olonos, and Voidhia (Panhellenicon) behind Patras. Mt. Guiona (pronounced 'Jona'), in Ozolian Locria, north-west of Amphissa, and west-north-west of Parnassus—which, according to the map of the *Etat-Major Français*, it overtops by 174 feet—was well seen; and of course the whole of Bœotia, with the channel of the Euripus beyond, lay spread out like a map, whilst due north and south respectively the Maliac (Gulf of Læmia) and Corinthian Gulfs were conspicuous and beautiful features. Eubœa was obscure, but some of the islands beyond it could be made out, and Olympus, or a lofty snow mountain apparently in its exact position, was also visible.

On the summit Mr. Tuckett gathered *Draba athoa* (?), the only species in flower; and farther down the following, also in flower, were collected by him: (at 7,000 feet) a species of *Crocus* unknown to Mr. Churchill; (6,500–7,000 feet) *Scilla bifolia*; (6,000–6,500 feet) *Anemone blanda*—'a form closely allied to *A. appenina* of Dalmatia and Tuscany, which is also cultivated in English gardens.'

The pine woods, which are of a rather scattered and open character, contain some old and large trees, but the majority are much distorted, as if the struggle for existence was a hard one, and, though very picturesque, would not make good timber.

The map of the *Etat-Major Français* gives the height of Mt. Lykeri as 2,459 mètres, or 8,068 English feet. Mr. Tuckett's boiling-point observations, by comparison with Athens as a base, give (as in the case of Dirphe) a rather higher result, viz. 2,517.4 mètres, or 8,259

English feet. The mean of the two boiling-point thermometer readings at 10.45 A.M. was $92^{\circ}03$ C. = 567.33 mm., the air temperature being 10° C. Dr. Schmidt's barometer at the same hour indicated (by a slight interpolation) 753.76 mm., with an air temperature of $20^{\circ}2$ C.

At 12.5 the descent was commenced by a sitting glissade, the effect of which, in saturating the petticoats (*fustanella*) of the worthy guide—who managed this, his first, attempt very creditably—excited endless merriment and pantomime throughout the day. At 1.25 the snow—through which myriads of large and brilliant Alpine crocuses were forcing their heads—was finally quitted, and at 3 the *κοιμέρος*, already referred to, was reached. Halting till 3.30, the col on the ridge bounding the plain on the south was gained at 5.10, and Arachova reached at 6. The evening light shone gloriously on the blue waters of the Gulf of Corinth and the peaks of the Morea; and later there were wonderfully contrasted tints of deep blue shadow and yellow glow, followed, as the sun sank, by the splendours of a full moon.

The same party left Corinth at 7 A.M. (on horseback) for the village of Trikala, situated high (3,445 feet) on the side of the valley of the Sys, a torrent which descends from Mt. Ziria (Cyllene) in a N.E. direction and enters the Gulf of Corinth near the village of Xylo Kastron. After visiting *en route* the interesting plateau and ruins of Sicyon, the charmingly situated villages of Súli, Velína, and Márkesi were successively passed, but being overtaken by darkness shortly after leaving the last-named place, and the track, which none of the men had previously traversed, proving very rough and difficult to distinguish, it was 11 P.M. before Trikala was reached.

The following morning, whilst Mr. Blackstone proceeded, with the dragoman (Angelos Melissinos), 'agoyiates,' horses, and baggage, by a pass to Goura or Gura, a village near the Lake of Phonia (Pheneos), Mr. Tuckett started at 7.45, with a native as guide, for the ascent of Mt. Ziria (Cyllene). At 9.10, after a steepish ascent, a narrow, straight, and nearly level valley was reached, which led in 20 minutes to an upland plain, partially cultivated. Traversing this for a quarter of an hour, and then proceeding along a narrow continuation of it till 10.20, a *κοιμέρος* (height about 5,200 feet) was reached not far from the foot of the steep, bare, grey, rocky slopes leading up to the highest ridge of the mountain, the actual summit of which is situated at the west extremity of a crescent-shaped ridge some miles in length. A halt was called for *διαουρη*, and to admit of the really splendid fellows who were here established with their flocks examining all the novelties in the possession of the stranger—the, to them, marvellous powers of a telescope being very 'great medicine,' and calling forth shouts of childlike laughter and delighted astonishment. Starting again about 11, and taking it very easily up the rocky slope, where the heat was intense, the summit (which is a double one) was reached by the eastern ridge at 12.45. The view was cloudless, but at the same time not very clear, owing to the presence of a certain amount of haze. During his two previous visits to Greece Mr. Tuckett had noticed that the glittering crest of Cyllene was visible from a greater number of points than any other Greek mountain, and he had therefore specially marked

it down as deserving attention. The converse proved equally true when on the summit, for the whole Morea—or at least its principal features—was included in the wonderful panorama. The rich variety of the details may be inferred from the following names of places and objects which were distinctly recognisable: Salamis, Hymettus, Gerania, the Isthmus of Corinth, Mycenæ, the Plain of Argos, Nauplia and its gulf, Mounts Aphrodisium, Mænalus, Taygetus, Ithome (?), Olonos, Chelmos, Voidhia, Verdussia, Guiona, Parnassus, Helicon, &c. &c., with, of course, a considerable stretch of the Gulf of Corinth and a portion of the Lake of Phonia. Chelmos was the most imposing mountain-form visible, and constitutes a noble *massif* in itself.

Two and three-quarter hours were spent on the summit in observations and the leisurely enjoyment of the wonderfully beautiful and interesting view; and the temperature in the shade being 75° (!) Fahr. at 2.45 P.M., though moderated by a gentle breeze passing over patches of half-melted snow, nothing could well be more luxurious in its way. Cyl-lene is the barest, and in itself, it must be confessed, one of the ugliest of mountains, looking much more attractive at a distance than close at hand; but, being very easy of ascent and commanding a panorama of such exceptional magnificence, it well repays a visit. The mean of readings at 2.45 and 3 P.M. of two boiling-point thermometers was $92^{\circ}6$ C. = 579.59 mm., with (as already stated) an air temperature in the shade of $23^{\circ}9$ C. (75° F.) Dr. Schmidt's barometer at Athens, at the same hour, stood at 754.38 mm., air $30^{\circ}7$ C. ($87^{\circ}3$ F.), which gives a height above sea-level of 2,446 mètres, or 8,025 English feet, the French determination being 2,374 mètres, or 7,789 English feet. Flowers were exceptionally scarce, and *Crocus nivalis* was the only species found.

At 3.30 P.M. the descent was commenced, by way of an elevated col, to the S. or S.S.E. of the summit, from which the view of the Lake of Phonia was very charming. Below it a pretty little *alp* was traversed, and then followed some scattered pine-woods (one tree measured 15 feet in circumference at 3 feet from the ground), succeeded by a plain with shepherds' huts, separated from Gura and the valley of the Aroanius, which flows into the lake, by a low ridge, resembling in appearance an ancient *moraine*, and sweeping round the skirts of Ziria in a peculiar and graceful curve. This plain was reached at 5, the ridge at 5.25 (whence there was another lovely peep of the Lake of Phonia), and Gura itself at 6. The French map gives the height of the lake as 758 mètres (2,487 English feet), and that of Gura may probably be 500 feet greater, or about 3,000 feet, as it is situated considerably above the stream of the Aroanius.

Four days' ride, through most charming scenery, *viâ* Zarukla, the source of the Styx, Solos, the monastery of Megaspelion (Megaspelæon), and Vostitza (Ægion), took the party on the afternoon of June 1 to Patras, where their delightful four weeks' wanderings in Greece terminated.

ALPINE ACCIDENTS AND ADVENTURES IN 1878.

THE CEVEDALE ACCIDENT.—The Editor has received letters from Mr. Arthur Johnson, Herr Schück, and from Dr. Salomon, the sole survivor of the Cavedale accident, clearing up the point left ambiguous in Dr. de Neufville's account as to what steps were taken for Dr. Salomon's succour while help was being sought from the valley. The second party on the mountain was made up not of one traveller and guide, but of four travellers with two guides. It was one of these—Herr Otto Schück, with the guide Vincent Reinstadtler—who rescued Dr. Salomon from the glacier cleft into which he had fallen. When they left to seek help, another guide, Aloys Schöpf, remained with the sufferer. Dr. Salomon writes, 'I wish to lay special stress on the fact that, owing to the consideration of the above-named gentleman and the conscientiousness of the guide Schöpf, I was not left alone for a single instant during the eight or nine hours which I had to pass on the glacier.'

The following additional particulars are made up from the letters of Mr. Johnson and Herr Schück, which supplement one another:—

The unfortunate man Zuschg, who was Reinstadtler's father-in-law, was 60 years old. He carried no axe. This was, in fact, his very first glacier expedition, and he was only engaged because there was no one else available. Joseph Reinstadtler was a good and trustworthy guide. He was engaged in cutting steps at the moment of the accident, which doubtless hindered him from checking the slip before it was too late. The slope was undoubtedly snow, not ice.

Reinstadtler's widow has thus lost husband and father at one blow, and she is left with three young children. She is not in actual want, owning three cows and a bit of land; but this, as usual, is encumbered. She is also obliged to keep a 'Knecht' to work the land in place of her lost relations, and his payment nearly absorbs the income of the property. Life must be very hard for her.

The priest, Herr Eller, who keeps an inn, opened a subscription for her; but visitors to the Suldenenthal are not so numerous as the fine scenery and good accommodation might warrant. Three hundred florins was the amount collected. Lately a small pension of 60 florins annually has been moved for from the Guide Subvention Fund of the German and Austrian Club. Further contributions would be most acceptable, and the poor woman's case appears one which may fairly be recommended to the readers of the 'Alpine Journal.' Subscriptions should be sent by P.O. order, addressed, 'Herr Eller, Pfarrer in St. Gertrud, Suldenenthal, Tyrol, Austria.'

LOST ON THE BERNINA.—Mr. H. W. Seton-Karr sends the following account of his adventure on Piz Bernina:—On Thursday, August 1, I started from Pontresina with Hans Grass, the son of the well-known guide of that name, and Michel Coray, guide and village 'bobby,' from Surlej. Being the first party to sleep in the new Boval hut of the S.A.C., we had to carry up several pots and pans.

I found that another party was destined for the same night quarters—two gentlemen of Zürich, with their guides and porters.

We had tolerably clean straw to sleep on, since we were the first oc-

cupants of the hut, but as for the fireplace, all the heat seemed to go up the chimney, but none of the smoke; so that, as we were eight in the hut and packed so tight that a laugh at any point reverberated along the line, it was not surprising if the air rushed out of the door in a visible column in the morning. We got off soon after one, with two lights for the party, and stumbling over huge boulders, the usual precursors of a great glacier, set foot on the ice, some of us not to leave it again for 44 hours. Passing under the Festung, we arrived at four on the huge terraces of névé which descend from Piz Bellavista. The morning was cloudless, except a few mists that were forming and dissolving against the Bernina, which rose opposite us, showing that currents of different temperatures were meeting. Here we were to separate, and a change of guides took place, to which I did not at the time object, though I believe that had I had old Hans Grass with me, instead of his son, we should not have been benighted as we were. Hans and Christian Grass, the two gentlemen of Zürich, and a porter for Piz Palù; I with Michel Coray and Christian Hans Grass for Piz Bernina. We took the usual course, nearly due west, to the Crastaguzza Saddle, crossed the Firnkessel to the north, and reached the foot of the arête at 6.30, all exhausted by the soft snow and hot sun. The snow part of the arête was unusually narrow in places, owing to a fierce wind that was dusting up the edge (for instance, three feet below the edge it would be a foot thick, and sunk away proportionately), so that we did not reach the summit (13,294 feet) till 9.30, and left it almost immediately.

So far the sky had been clear, except that below the Disgrazia fleecy clouds were lying; but now the weather behaved in a most unaccountable, not to say magical, fashion, for all round the peak, without any warning, dense clouds formed, and shortly after a furious storm came up from the south—providentially a few minutes after we had left the arête, or we should most certainly have been blown off it down to the Tschierva glacier.

From this point I cannot say that my guides showed much judgment or energy. Though the storm was raging furiously the direction to go in was obvious, and there was no impossibility in moving. I urged them, however, in vain to persevere. Grass seemed completely dumb-founded, and we spent the remainder of the day in digging refuges in the snow and tramping up and down on the bank of a precipice which (as I easily ascertained with a compass, but endeavoured in vain to explain to Grass) overlooked the Crastaguzza Saddle. We found a poor shelter for the night in the shape of a rock eight feet square, after a perilous climb in the twilight along the edge of the gulf. Curiously enough, the fifteen hours we spent there seemed like one, from the intense drowsiness brought on by the cold. We must certainly have presented a remarkable appearance. The coating of ice over us was at least an inch thick; our hats were frozen to the hair; Coray's nose alone appeared beneath his ice-mask, while marbles of ice had formed even on his eyelashes; Grass looked like Father Christmas on a cake. When morning broke we found ourselves in an awkward predicament. During the night the storm had been

blowing up the precipice with such force that we should have found it hard to fall over, and had formed an immense snow-drift above us. We were soon on the top, and found that it overhung and sank away into clouds below, which Grass declared was towards Italy; the precipice closed the rear and right, a wall of rock the left. We made seven sorties from our rock. Six times our courage failed us on the brink of the crest; at the seventh we got down somehow by the rope, at about midday, and after six hours of step-cutting (made difficult by the showers of hail that poured down the slope and filled up the steps the instant they were cut) reached a 'Bergschlund,' filled by hail, where it was necessary to jump down about thirty feet. We managed it successfully, Coray landing in a sitting position with a loud thud. The clouds now broke, and we found ourselves on the west side of the Morteratsch ice-fall, where Grass partly retrieved his character by threading it in grand style (though he never recognised the locality). The glacier below us was curiously distorted by refraction, so that the farther end looked the highest. Young Grass did not recognise his fellow guides, who came out to meet us with lights when we reached Boval, but asked the way in Italian to the nearest inn. Coray and myself, being frost-bitten, slept (and pretty soundly too) with our hands in snow.

Hans Grass (the father) had been overtaken by the storm somewhere near the top of the Palù, but got his party back safely to Pontresina by Friday night. When he found we had not come back, with natural anxiety for his son, he started off to look for us, taking Johann Grass, but was driven back near the Festung by the storm; being joined by Christian Grass, he set off again, only to be again driven back near the Firnkessel, and returned to Pontresina on Saturday night, having thus been forty hours on the move.*

H. W. S. K.

THE ESCAPE ON PIZ PALÜ.—A full and excellent account of this wonderful escape has been given by Dr. Gussfeldt in a German paper, with the object of clearing Hans Grass (the father) from injurious statements circulated in Switzerland.

Such fault as there was lay entirely with the leading guide, who kept too near the corniced crest. Hans Grass, who was in the rear, did wonders in holding up the two travellers and leading guide, who were hanging—one in space, the other two on the face of an exceedingly steep slope. Mr. Benjamin Wainewright, by retaining hold of his ice-axe, also contributed essentially to the happy issue, as, but for this, steps could hardly have been cut, and he and his companions enabled to

* This story recalls, though happily with a different ending, the terrible catastrophe on Mont Blanc in 1870. In both there seems to have been the same failure in the guides. Nothing can give a man a good head for locality, but guides should be taught at least the use of a compass and the need of prompt energy when overtaken by bad weather. If their party cannot face the storm with unimpaired powers, how can they expect to be more successful when benumbed and exhausted by hours of exposure? The energy of despair sometimes does wonders; but it is a last resource which ought not to be trusted to. We hope the Swiss club will make this adventure the subject of a warning to the guides under their influence, and particularly to those of Pontresina.—EDITOR.

rescue themselves from their perilous position. Hans Grass is recommended on all sides as a thoroughly efficient guide, and has the highest reputation of any man in his profession in Eastern Switzerland. He appears, however, to be the only man in the Engadine capable of taking the lead in a difficult expedition.

ALPINE NOTES.

ALPINE HUTS.—Complaints have been recently made in various parts of the Alps of the state in which huts are often left by parties who have spent the night in them, and the injury done to the furniture and cooking utensils. The mischief is believed to be due principally to the carelessness of guides not belonging to the district, and consequently without any feeling of responsibility to counteract the natural indolence of 3 A.M., supported, as it usually is, by the general eagerness for a start. Travellers are urgently requested, therefore, to insist on their guides using the stove carefully, and, before leaving, cleansing the cooking utensils, restoring to their proper places all blankets or furniture, and shutting the doors and windows. It might be well if the foreign Alpine Clubs would issue a printed notice to this effect, to be pasted up conspicuously in the huts under their control. It should be in French, German, and Italian, so as to be intelligible to guides of every nationality.

FIRST ASCENT OF THE PALA DI S. MARTINO, 3,244 MÈTRES.—Mr. T. Meurer and the Marquis A. di Pallavicini, with the guides Santo Siorpæes and Arcangelo Dimaj, of Cortina, had made during the days from the 17th to the 22nd of June, 1878, starting from S. Martino di Castrozza, several reconnaissances and useless attempts to ascend the Pala di S. Martino. From articles in the 'Alpine Journal' concerning the attempts of Messrs. Whitwell, Beachcroft, and Tucker, and information given by Mr. Tuckett about the possibility of an ascent of the Pala, these gentlemen were aware that an attempt to gain the summit from the N. would prove impracticable by ordinary mountaineering methods. The S.W. side proved quite as hopeless, and the S. and S.E. sides were found unfavourable to an ascent. On the E. side Mr. Whitwell succeeded in gaining a considerable height in the year 1870, but without being able to scale the peak. From the N.N.W. a broken ridge leads from the plateau to the main mass of the Pala; but this ridge proved, as the above-mentioned gentlemen found, to be cut off from the Pala by an impassable chasm.

Messrs. Beachcroft and Tucker, with François Devouassoud and Battista della Santa, had made an attempt, as they state themselves, on the N.W. side ('Alpine Journal,' vol. vii. p. 332), but also here found further ascent so dangerous that they gave up the attack. Considering these circumstances, and making grateful use of these most valuable observations, Messrs. Meurer and Pallavicini decided to direct their attempts specially towards the W. and N.W. sides, and only if these proved useless to try the E. side, which Messrs. Whitwell and Tuckett pronounced to be not quite hopeless.

The first days were made use of by the two gentlemen and their guides for reconnaissances. On the 21st a serious attempt was made on the W. and S.W. sides. On the 22nd the rocks of the Cima della Rosetta were climbed, in order to observe from a greater height if an attempt on the N.W. cliffs would prove unsuccessful higher up in the main mass of the Pala. This inspection proved satisfactory, and so an attack on the N.W. side was decided upon.

On the 23rd June the party started, with Michele Bettega, of S. Martino, as porter, at four o'clock from S. Martino, and reached—by skirting the base of the Cima della Rosetta, and climbing the somewhat steep wall beyond it—the foot of the glacier, which was still thickly covered with snow. After having scaled this glacier, the party, having been climbing four hours, were pretty high up on the ice which lies in the recess between the Pala and the Cima della Rosetta. This glacier terminates at its upper end in a steep couloir running up the N. face of the Pala to the pass between the Pala and the Cima della Rosetta.

In a narrow, steep couloir to the right of the glacier the ascent was continued, not without considerable difficulties. They then bore to the right, and some iced 'Bergschründe' were traversed, which required great care. All at once the party stood before a perpendicular wall, which evidently had to be scaled. [See Mr. Tucker's note.] This proved to be, not so much in ascending, but especially in the descent, the most perilous part of the expedition. Above this wall the party climbed laterally through crumbling rocks. Once more a difficulty presented itself, which seemed at first to be insurmountable. The party, having climbed a narrow ridge of an almost perpendicular wall, found itself in a stony ravine (Felsenkessel), from which there seemed to be no issue whatever. It was only after repeated search that the brave leader of the expedition, the guide Santo Siorpaes, found, by scaling a prominent and overhanging rock, an issue which led upwards through a narrow 'vallon.' On passing this very dangerous spot the guide Dimaj was struck by a falling stone, loosened by the pulling of the rope, which rolled down and hurt his head—an accident which might have easily proved serious. A further way was now found, and although very steep, still not quite as dangerous. An icefield having been at last reached, in another quarter of an hour the summit of the Pala was conquered.

The Pala di S. Martino consists of three peaks, which are only separated from each other by small depressions. All these were thickly covered with snow, and that was the reason why a stone man was built on the E. side, where a spot free of snow was found. A card with the dates of the ascent was deposited. From the S.W. peak S. Martino is to be seen, and the charming Val Cismone. The S.W. peak is the lowest of the three, although the difference in height between the peaks consists of a few metres only. The declivity of the precipices on all sides of the Pala is frightfully rapid.

It was exactly twelve o'clock as the party reached the summit. Clouds prevented a clear view, and a heavy storm set in whilst the party was still on the summit of the Pala.

The descent was made still more difficult under such circumstances, the rocks being slippery and the cold benumbing hands and feet. The ascent of the walls had required four hours, whilst the descent took five hours and was very dangerous. The guides, Santo Siorpaes and Arcangelo Dimaj, and the porter, Michele Bettega, behaved wonderfully, and proved as courageous as skilful. S. Martino was reached at half-past seven o'clock.

From S. Martino to the rocks, four hours; ascent of the rock walls up to the summit, four hours. Descent to the glacier, five hours; and from there, glissading on the snow-fields, it took two hours more to reach S. Martino. T. MEURER.

KÖNIGSSPITZE (ORTLER ALPS)—FIRST ASCENT FROM THE SULDEN GRAT.—Since Mr. Tuckett set foot for the first time on the Königspitze ascents have generally been made from the S.E. side. The difficulties of an ascent on the west by the long 'Grat,' which runs from the N.W. to the S.E. and leads to the summit, were so considerable that attempts had proved useless.

On July 1, 1878, Mr. T. Meurer and the Marquis A. di Pallavicini ascended, with the guides Peter D'Angl and Johann Pinggera, of Sulden, the Königspitze by the usual road from the Schaubach Hütte, over the 'Königsjoch' and the 'Schulter,' wanting to reconnoitre. They descended by the Cedehgletscher towards S. Caterina. Next evening the party found itself in the Malga in the Val Zebbru, with the intention to gain the Sulden or Payerjoch—the depression between the Königspitze and Monte Zebbru—and to try from there to conquer the Königspitze by the Sulden Grat. Bad weather and heavy rain frustrated this plan.

On July 5 the party were again at the Schaubach Hütte, with Alois Pinggera as third guide, and a start was made next morning at 3 o'clock. The Sulden Glacier was traversed in a W.S.W. direction, and also another secondary glacier, which streams down in direct line from the Königspitze, which I will call Königswand Gletscher. This virginal glacier, which precipitated itself very steeply on the Sulden Glacier, was crossed, but had to be abandoned, the séracs being frightfully cleft asunder; and the ascent was continued on the right side in the rocks. Above the séracs the glacier was again set foot upon, and scaled by step-cutting up to a little saddle, by which the party was sheltered from the N.W. storm; but here the storm reached them in such a way that it almost made every further attempt of ascent impossible. From the saddle a very steep ice-field slopes towards the Grat, having a height of (*circa*) 3,700 mètres. It was reached at 8 o'clock.

The ridge is sharp, and, as all those are aware who know the peak—the proudest mountain of the Eastern Alps—it is protected on both sides by frightful precipitous walls, which run down from one side on to the Sulden, and from the other on to the Zebbru Glacier. Notwithstanding the heavy storm, the party progressed relatively very well along the ridge till some huge boulders suddenly prevented further advance. Owing to the congelation, and the height of these blocks, it was quite impossible to surmount them, and, unless a retreat was resolved on, nothing could be done but by finding a way round them on the south side of the mountain; on the north side it was impracticable.

With precaution the party descended a bit of the steep rock-wall and traversed on the slope couloirs filled up by new and old snow, and rock-ridges formed by congelation of loose and firm rocks. This was a passage of several hours, during which the slightest carelessness would have caused a dreadful catastrophe. At last the party reached once more the Grat, and, the wind having calmed down in the meantime, the summit was reached at half-past 12, without any further obstacles. The weather was splendid.

Peter D'Angl deserves to be specially mentioned, as his great courage contributed essentially to the success of the expedition. The other two guides verified their excellent reputation.

The descent was made by the Königsjoch to St. Gertrud, in the Suldenthal, where the party arrived at half-past 5 o'clock in the afternoon. Time: Schaubach Hütte to beyond the séracs, 3 hours; to the Grat, 2 hours; by the Grat to the summit, $4\frac{1}{2}=9\frac{1}{2}$ hours. An hour's rest on the summit. Descent to St. Gertrud, 4 hours; all including halts.

T. MEURER.

THE THIRD PEAK OF PIZ ROSEG.—On October 7 Dr. J. M. Ludwig, of Pontresina, ascended all three peaks of Piz Roseg for the first time. 'My guide was Hans Grass. We took two other guides with us (Cadenau and Hans Grass, son of Christian Grass), because they had never made the ascent before. We slept at the new shelter-hut in Mortel, left it at 2.25 A.M., reached the ice-slope which hangs down from the Roseg to the Sella Glacier at 5.50; stopping 30 minutes for breakfast, we reached the top of the before-named slope at 7.50, and the Schneekuppe, or west peak, at 9; the highest at 10.6—seven hours walking from the hut. Starting at 10.30, reached the third peak at 11.35, along a ridge consisting almost entirely of ice, and requiring great care. The Scerscen Glacier was reached at 1.30 (Italian side), down an excessively steep and dangerous couloir, consisting of ice and rock. Weather was threatening, so return was made by the Sella pass instead of the Crastaguzza pass. The two young guides behaved well. Hans Grass showed his mastership. He is a model of a guide in every way.

'J. M. LUDWIG.'

PIZ BERNINA.—Dr. Gussfeld has been successful in reaching the detached west spur of the Piz Bernina, which has of late years been distinguished by the name given on the Italian side to the whole block—Monte Rosso di Scerscen. He has also reached the summit of Piz Bernina by the very long and difficult ridge which falls to the saddle between the Bernina and Piz Mortaratsch.

THE LEVANNA.—In looking at the mass of the Levanna from the Stabilimento at Ceresole, the eye first falls on the Glacier de Forno; then a broken ridge of rocks runs up to the Italian Levanna. This is the peak an ascent of which by Lord Wentworth is noticed in the visitors' book at the Stabilimento. Between the Italian Levanna and the next peak to the right, which is really a very inferior point and owes its apparent importance to the accident of its position, there is a very steep snow-slope. This snow-slope, the top of which is really the end of the Glacier de Girard, has on its one side the north-west arête of the Italian Levanna, and on the other a similar ridge, steeper though shorter.

After passing the inferior peak we come to the real *Becca a tre Corni*. In the arête which runs up to the first of the three horns there is a curious tooth of rock, which leans over towards the east. Besides the three horns themselves, several rocky teeth start up from the summit ridge. The first horn (the most easterly) is the one on which the Italian engineers have erected a substantial stone-man. The second or middle horn (the second and third points should rather be called humps than horns) was ascended by Mr. James Heelis and myself, with Jean Martin and Alphonse Payot, on August 12, from the Châlet of Duis.

We found amongst a few stones which had been thrown together on the top the card of A. Castagneri, the guide of Balme, only. The third horn is inferior in height to the first and second, but which of the two, the first or second, is really the higher we could not determine. We were inclined to think that if the most eastern peak is the highest, it owes its supremacy to the stone-man before mentioned. At any rate one or other of these two points is the highest peak of the Levanna group, and the difference between them is very small indeed. From the third horn a ridge, nearly level for its western half, stretches to the point called on the Italian map Punta della Scott. This, according to M. Jean Culet, of Bonneval, is the point ascended by Mr. Cowell; and when the *Levanna* is ascended from Bonneval, this is the point to which travellers are taken. From this point the ridge falls away to the west.

G. YELD.

It seems that the Levanna has three peaks, and the highest or central peak three horns. It is probable that the west peak (3,607 mètres) was first climbed by Mr. Cowell; the central (3,640 mètres), by S. Vaccarone and Gramaglia from the south side; the east (3,570 mètres), by Lord Wentworth.—EDITOR.

AIGUILLE DU MIDI DE PEISEY.—Mr. Coolidge writes: ‘At p. 98 of the last number of the Journal I described my ascent of this peak last summer, under the impression that it had not previously attracted the notice of travellers. Mr. R. C. Nichols has had the goodness to communicate to me his notes of the ascent made by him on September 12, 1867, in the company of Mr. E. P. Rowsell, with J. V. Favret and J. Tairraz, junior, which is, of course, the true first ascent by travellers. Starting from the Châlets de l’Arc at 5.35, they followed the line of an old moraine to the foot of a long snow couloir, beside which they ascended in two hours and a half to the arête, kept round to the right of the little peak, marked 3,031 mètres, then along the arête to the foot of the final peak. They then came to a notch on another arête running W., by which they reached the top at 10.25. The return was effected direct to the first arête, and then as before to Val Peisey.

‘My route seems to have been essentially the same as that described by Mr. Nichols, and I can only claim to have discovered a new descent to the Val de Prémou. Mr. Nichols agrees with me as to the non-existence of the peak marked 3,422 mètres on the French map, the cairn being on the point called in that map Sommet de Bellecôte. He further informs me that the name “Mont Bernier,” which appears on the A. C. map as the appellation of the highest peak, is taken from the Piedmontese “Measurement of an Arc of the Mean Parallel,” and

that of "Mont Blanc de Peisey" from a photograph of the original drawing of the then unpublished French map. According to this latter authority, the height of 3,360 mètres attributed on the published map to the lower summit, which it wrongly calls "Aiguille du Midi," is a misprint for 3,340 mètres.

'I take the present opportunity of more accurately defining the variation I made on the Gabelhorn (p. 107), which has given rise to some confusion, which will be obviated by reading "north-western" for "northern" in the fourth line from the bottom. This will serve to show that it is quite distinct from the route taken by Messrs. Kitson and Wethered in August, 1875.'

'I may also note that at the bottom of p. 98 and top of p. 99 "Mont l'Aliet" should be read for "Mont Aliet."'

MONT MAUDIT.—There is an apparent contradiction between the report of the first ascent of this peak on p. 105 and the letter of Sir J. Ramsay quoted in Mr. Longman's 'History of Modern Mountaineering,' p. 14. Sir J. Ramsay has, however, explained that in the expression 'reached the top of Mt. Maudit' he referred to the crest of the mountain, and not to the actual summit. No one had been within several hundred feet of this until Messrs. Davidson and Hoare's ascent.

AIGUILLE DE LA ZA FROM THE GLACIER DE DAUVA BLANTZ.—In the recent list of *new expeditions* Mr. J. C. Leman gives an account of excursions which include the direct ascent from Arolla to the head of the Glacier de Dauva Blantz (the meaning of the term is discussed, 'Alpine Journal,' vol. viii. p. 95), and thence over the ridge of the Grandes Dents to the base of the Aiguille de la Za. I am in a position to state that Mr. Leman has been anticipated in this expedition, and that the first to reach the Aiguille directly from Arolla by the Maja ridge was Mr. T. S. Kennedy. There being no record of his ascent among *new expeditions*—as is also the case with his ascent of the Aiguilles Rouges on the Arolla side, an expedition of some danger from the rottenness of the rocks—I am not fully provided with details of his course. However, Messrs. Cawood and Colgrove and I descended from the base of the Aiguille by a route in all essentials the same as that described by Mr. Leman. Brief mention of both expeditions, with a discussion of the relative amounts of risk involved in the different direct routes to the Aiguille, will be found in vol. viii. pp. 10 and 12. With the remainder of Mr. Leman's account the above remarks are, of course, not concerned.

The engraving at p. 15, accompanying the article just referred to, shows the route on the Arolla side. We crossed the main ridge where the dotted line falls. The latter should be shifted to the left, and the upper line, which marks the real summit, strengthened, an unfortunate mistake having been made in executing the engraving, whereby the highest part of the ridge south of the Aiguille is made to resemble a more distant mountain. Many visitors to Arolla will have noticed the light colour of the rocks at this part, which was the original cause of the mishap. Descending on the other side of the secondary ridge seen coming down to the Maja, we reached the head of the glacier, of which, however, we merely skirted the fringe. The ridge becomes level by

the side of the glacier, which rises close up to its rocky brim. My engravers have here turned a patch of snow into a gap; the upper line of the former should be strengthened, as it represents the line of the ridge. The buttress of rock seen below the apparent gap, and inclined to the right, affords an easy scramble, and marks the line of the most direct course to or from the hotel; the descent may be facilitated, snow permitting, by a gliassade in the hollow on the right.

I should hardly advocate considering as a col the passage over this part of the ridge of the Grandes Dents, in which there is no depression of importance; the Col de la Za is lower, and, if taken by the route described in the above-cited article (also vol. vii. p. 319), no less safe.

At the same time I fully agree with Mr. Leman in the great superiority of the higher route over the latter, and still more over the Col de Bertol, in regard to view; and it is on this account well worthy of attention as an agreeable variation on the ordinary route to Zermatt. The traverse, from this side, of the ridge whose western end forms the rocky pyramid so conspicuously dividing the head of the Bertol Glacier involves hardly any ascent.

A. CUSR.

BASODINE AND OFENJOCH.—The following note is also supplementary to notes on 'new expeditions' in the last number. Mr. Moore's direct descent from the Basodine to the Alp Zotto had been anticipated in 1872 by Mr. Gelpke, a Swiss engineer ('Jahrbuch,' x. p. 260). Mr. Gardiner's route over the Ofenjoch to the upper névé of the Hohsänd glacier had been previously traversed in 1872 by Dr. H. Dirbi (July, 1872, 'Jahrbuch,' viii. p. 251), who from this point, however, took a wholly different route to the Rhone valley, *via* the Hohsänd pass.

It may be as well to call attention to the definition of 'new expeditions' given in vol. iii. p. 145—'expeditions in part or wholly new, or not made before by English mountaineers.' Acting on this principle, the Editor feels no scruple in inserting notes of expeditions which have not yet been noted in England, without previously undertaking a laborious search through the innumerable Alpine publications published on the Continent, although he will always be happy to receive additional details or references as to foreign ascents.

THE COURMAYEUR ROUTE UP MONT BLANC.—Signor D. Marinelli sends an answer to the query in p. 79 of this volume as to the existence of a route to the cabin on the Aiguille Grise safe from falling stones.

'In order to avoid for the future the risk of accidents similar to that which befell S. Gonella's porter, it is desirable to quit the Glacier du Mt. Blanc at the point where this breaks into great séracs, and at the exact spot where the séracs seen from below seem to form a plateau. The passage on to the rocks on the left (in ascending) can easily be made by the aid of a few good steps cut in the ice. Once on the rocks, which are worn somewhat smooth by the previous passage of the ice, half an hour's easy gymnastic is enough to overcome such slight obstacles as they present. Higher up the climber finds it possible to keep farther from the glacier, and before reaching the "gazon" comes on a faint track which soon brings him to the cabin.

'From the cabin to Courmayeur by this route there are no difficulties

or dangers. Porters constantly pass over it heavily charged and unroped, and ours did so.'

COL DE LA DENT BLANCHE.—This name is sometimes separately given in the Babel of Alpine nomenclature to two cols in the same neighbourhood, neither of which appear, however, to have any proper claim to such distinction, viz. the cols 'Durand' and 'Grand Cornier.' The col between the Mont Durand and the Pointe de Zinal is now almost exclusively called, in Alpine *parlance*, after the former of these two peaks, and is the only one in the Alps which bears the name of 'Durand;' indeed, the Col du Sonadon—at first called 'Col Durand'—was obliged to surrender the title (originally given to it from one of the glaciers at its base) in order to avoid confusion with the other pass (*vide* 'Peaks, Passes, and Glaciers,' vol. i. p. 250, 'Col du Sonadon'). In fact, the 'Col Durand,' now generally known as such, although identical with the lowest depression in the ridge connecting the Dent Blanche with the Gabelhorn, seems to have forfeited long ago any possible right to be connected by name with the former of these mountains—i.e. since the discovery of another passage across the ridge, in immediate contact with an eastern spur of the Dent Blanche, by Mr. T. S. Phillpotts in 1872—whereas the Col Durand is not directly connected with the Dent Blanche at all. Synonyms in the Alps are most confusing, as the Federal and S. A. C. maps appear (at least in this instance) to agree in thinking, for 'Col Durand' alone is printed over the pass usually so called in both of them, whilst in the Alpine Club map 'Col de la Dent Blanche' is its only name.

Nor is it less confusing that the pass from Zinal to Evolena, between the Dent Blanche and Grand Cornier, should be credited with a double title. In the S. A. C. map it is styled 'Col du Grand Cornier (Dent Blanche),' although the former is its generally accredited name. Messrs. Hornby and Philpott, who first crossed it (in 1864), never dreamed of calling it after the Dent Blanche, as I have learned from one of them.

Surely the pass which deserves, *par excellence* and exclusively, the name 'Col de la Dent Blanche' is that formed by the depression between the Dent Blanche and the Pointe de Zinal, which flank it immediately on the west and east at the heads of the Schönbühl and Durand Glaciers. Mr. T. S. Phillpotts (under the heading 'Zinal Jock') has suggested 'Col Zinal' as its name (*Journal*, vol. vi. p. 437), but a whole cloud of confusion would be dispersed, as well as a far more appropriate title afforded, if the great mountain immediately on its west were allowed to supersede the much lesser Pointe de Zinal (3790 in the Federal map) by lending its name, as well as its shadow, to the 'Col de la Dent Blanche' of which I write. As districts become better known and studied, names sometimes require readjustment and alteration.

In company with Mr. F. O. Schuster, I crossed this pass from Zermatt to Zinal (the first time it has been made in that direction, and the second time from either side) on August 5 ult. The col is interesting, and affords splendid views of the Dent d'Herens and Gabelhorn, on either side; the panorama is not so extensive as that from the

Col Durand, owing to the immediate presence of the Dent Blanche and Pointe de Zinal, west and east of it respectively. I quite agree with Mr. Phillpotts that it is better taken from the Zinal side, for the reason which he gives; and also that the left bank of the Schönbühl glacier should be followed as much as possible. From its more remote position, this col is of course longer than the Col Durand in crossing between Zermatt and Zinal.

F. T. WETHERED.

ZERMATT AND THE NEW WEISS THOR IN 1849.—The editor has been favoured with the following interesting description of the Vispthal in 1849, and of the first passage by a traveller of the New Weiss Thor—Mrs. Marshall Hall, senior:—

‘Mr. Longman’s interesting paper in the “Alpine Journal” on the gradual development of our present knowledge of the Monte Rosa district has reminded me of a visit to Zermatt which my son and I made in 1849, on which occasion the former, then only eighteen, was the first traveller to cross the pass now designated the “New Weiss Thor.”

‘In the month of August of that year we arrived at Visp from the Grimsel, from whence we had walked most of the way to Brieg, sleeping at Obergestelen, then a miserable place. At that time the “*chr*” road only commenced at the latter village, and no kind of carriage was to be had anywhere between it and Brieg. We had been accompanied from Grindelwald by a guide of some repute, named Christian Blauer, who had crossed the Strahleck with my son; and we were bound for Zermatt, of which we had read in the interesting work of Professor Forbes—“Travels through the Alps of Savoy,” &c. Blauer was to procure me a horse, and we were to start the next morning, very early, on account of the heat. Much after the appointed hour Blauer, having ransacked Visp for a horse, at length appeared, bringing one which he had had the utmost difficulty in procuring; it was led by a girl, and was in a most deplorable state of dirt, and the side saddle, which was in a ruinous condition, was the only one in the town.

‘The path between Visp and Zermatt was very different in its condition from the present one. A bridle road indeed existed, but in many parts it had been washed away, leaving no secure footing, so that it was rather an anxious thing to ride over such places on the steep slope of a mountain, close to yawning precipices of fearful depth and totally unguarded. Between St. Niklaus and Randa several torrents had to be crossed, not then, as now, bridged over. The heat of the weather, causing unusual melting of the snow, had greatly swelled these mountain streams, and the force of the water had brought down masses of rock from above. These torrents were not pleasant to cross on horseback. On one occasion my horse turned round in the middle of the stream and refused to face the fury of the waters; the men, however, who crossed on planks, yelled at the frightened animal and finally persuaded him to face the furious torrent, and so I escaped the imminent peril of being deposited in its midst.

‘At Randa, where no inn then existed, we stopped to rest at the house of the curé. The worthy priest received us hospitably, setting before us black bread and sour wine. His attire was greasy and dirty, but we chatted amicably and he seemed rather to enjoy our visit.

‘The long ride, occupying (with the rests) about twelve hours, was very fatiguing in the heat of the day, added to which we had had no good food, and on arriving at Zermatt and alighting at the door of Herr Lauber, the village doctor, whose kindly wife received the few strangers who found their way to this little-known place, we were met with the unwelcome news that they had no room for us, two gentlemen being already installed as their guests. However, we were conducted to an uninhabited house not far off, where two dismal, dirty rooms were assigned us, entered by doors so low that even I was obliged to stoop in order to pass through them.

‘I must hasten, however, to the point of my story. My son had heard of the Weiss Thor, and had set his heart upon crossing the pass. At that time only one Weiss Thor was known to fame—that now distinguished as the “old” one. Blauer was a stranger to the locality, and on making enquiries all the Zermatters shook their heads and said the Weiss Thor was not now practicable. No one could be found willing to accompany my son and his guide. This was a great disappointment to the former, whilst Blauer, who held the Valaisans in great contempt, was incredulous as to the impracticability of the passage. At length, on our third day at Zermatt, he came to me with great glee, saying, “I have found a man who is willing to accompany us over the Weiss Thor to Macugnaga. Shall I bring him to you? He is the president of the village.” Accordingly “the Herr President” was introduced—a swarthy, brigand-like fellow. I questioned him as to the proposed expedition, which he represented as free from danger. The man’s appearance belied his real character, which was mild and somewhat timid. My son was overjoyed at the prospect of the fulfilment of his project. Blauer had formed a favourable opinion of his mountaineering capabilities from what he had observed on the Strahleck. He was sure-footed, light, active, and courageous, and on former occasions had done some rather difficult work at Chamonix with ease and success.

‘Full of fears for his safety, I heard him depart at four the next morning. To divert my anxiety the amiable Frau Lauber made up a little party for an excursion to the Riffelberg. I rode her own nice little horse with the luxury of a new side-saddle. A careful old man was my guide, and Madame Lauber’s nephew, a student from the college at Sion, and the little maid of the house, were my companions. I have never been able to retrace exactly the course we took, but think it must have been to the Hochthäligrat, returning by Guggli, for I remember looking over the Findelen Glacier, after seeing Monte Rosa and the Gorner Glacier. I regarded Monte Rosa with great respect as an inaccessible mountain, no one having, up to that time, been able to reach the Höchste Spitze. As for the giant Matterhorn, it had never entered the mind of man that its ascent was possible. I little thought that a comfortable hôtel would one day be built on the mountain upon which I stood, where I should spend many an enjoyable day, and that I should in my old age, from the Cima di Jazzi, an altitude of 12,527 feet, look down upon the pass which my son had crossed.

‘The next day, again mounting my amiable hostess’s delightful horse, I had a pleasant ride down to Visp, where I was made happy by meet-

ing my son in safety from his expedition, which shall be narrated in his own words:—

“Our local guide proved much of a croaker and, the weather being doubtful, repeatedly urged upon us a retreat, which neither Blauer nor I saw any occasion for. We took the route by the Findelen Glacier. The ice caverns were finer in 1849 than I have seen them since. Close to the ridge dividing the Zermatt from the Saas Valley, I went in up to my waist, but fortunately with my alpenstock athwart what proved to be a large crevasse with a beautiful cavern close to me. As was too common in those days, we had no rope, and nothing but an old chopper by way of ice-axe.

“We followed the ridge which bounds the valley of Macugnaga on the north for some distance, with the Schwartzberg Glacier beneath on our left, and on our right what seemed tremendous precipices; on this side a sea of clouds, with frequent flashes of lightning, lay perhaps a mile below, the sky above us being blue.

“We began our unroped descent with a glissade down a short bit of hard ice, which I by no means relished, being afraid of shooting over into space when I got across. Then we took to a ridge of decayed rock, at a particularly steep angle, which is not used now that the pass is better known.

“We descended first into snow, then into rain and lightning, reaching Macugnaga fairly wet through.

“For some years afterwards I had no notion that I had made the New Weiss Thor, but imagined myself to have crossed the disused passage, the locality of which no one could distinctly point out to me. At that time there were no good maps of the district.”

‘My son returned to Visp by the Monte Moro and Saas.’

PRECAUTIONS AGAINST SNOW-BLINDNESS.—The following note throws light on the habits of the Circassians before their expatriation, and suggests a new remedy for sportsmen against snow-blindness.

‘In the winter of 1837 we had just succeeded in beating back a large party of Abazeks (Circassians) that had come down into the plains of Kuban from the Caucasus mountains in order to levy black-mail and to rob and murder the frontier Cossacks, and we were on the march home along the mountain plains, when, dazzled by the intense sun-rays reflected by the endless snow-fields we were marching along, my eyelids lost all power to open; I felt my elbow touched, and, looking through my fingers, I beheld one of our friendly highlanders preparing a kind of black paste by mixing gunpowder with snow. The General told me to let him do what he wanted. The Circassian applied the black stuff under my eyes, on my cheeks, and the sides of my nose. To my astonishment I could then open my eyes and felt no more any difficulty to see plainly and clearly everything. I have tried that experiment many times since, and it never failed to relieve me, although I used common Indian ink and black water-colour instead of the above-mentioned paste.’—Note by M. Gustav de Veh, retired Russian officer, serving at the time with the army of the Caucasus.

EXCURSIONS IN DAUPHINÉ AND THE TARENTOISE.—We have received from M. Henri Ferrand, member of the French, Swiss, Italian, and

other Alpine Clubs, a detailed account of his expeditions last summer, of which we can only find room for the following extracts:—

(1) On June 25, with his father, M. Ferrand ascended the *Grande Moucherolle* (2,289 mètres=7,510 feet), near Grenoble, by the steep eastern face, which had been accomplished but once previously. They took five hours up from Villar de Laus, and four down. The last rocks took half an hour.

(2) July 23. M. Ferrand, with Pierre Ginét, of Allemont, took the rarely-used route up the *Mont Thabor* (3,182 mètres=10,440 feet) by the Valmeinier.* Starting from the châteaux of La Sausse, 4½ hours from S. Michel de Maurienne, they reached the Col de Valmeinier (2,900 mètres) in 3½ hours, and the chapel on the summit in an hour more, whence the 'signal' on the highest point is but a few minutes distant. In two hours they reached the Granges de Valétoite, Mellezel in 1¾ and Bardonnèche in ¾ hour more. Total, 4½ hours from top.

(3) July 31. M. Ferrand, with the same guide, made an attempt to ascend the hitherto unclimbed *Grand Bec* (3,420 mètres=11,221 feet). Starting from Pralognan, they followed the route of the Col de la Vanoise for a short distance, then struck up to châteaux of Mont Bochor, and crossed a minor ridge near the Pointe de Léchaux to the head of Combe de la Vuzelle. They then reached the arête of the Grand Bec, and would probably have reached the top, had not a dense mist prevented them from advancing. Their highest point is estimated by M. Ferrand at 3,200 mètres, or 10,499 feet. They descended by the Col de la Vuzelle to Planay, and returned to Pralognan by the high road.

The first ascent of this peak was effected on September 19 by M. Albert Guyard, of the French Alpine Club.

(4) August 5. The same party, reinforced by MM. A. Doix-Mulaton and E. Valette, and the guides Abel and Joseph Amiez, of Pralognan, starting from the châteaux of La Motte, two hours from Pralognan, passed the Lac Blanc and reached the Col de Gébroulaz, whence they made the second ascent of the highest point of the *Aiguille de Polset* (3,538 mètres=11,608 feet).† Returning to the Col de Gébroulaz, they reached in 85 minutes the point marked 3,217 mètres (=10,555 feet) on the French map. This point was named *Col de Polset*. It was probably crossed by Mr. W. Mathews in 1861.‡ In 3¾ hours they reached the châteaux of Polset, and Modane in 1¼ more.

(5) August 8. M. Ferrand, with Ginét, made what is believed to be the first ascent by travellers of the *Pic du Frêne*, also known as the *Pic du Grand Clocher du Frêne* (2,808 mètres=9,213 feet). Starting from the châteaux of Bochu, or Bachau (1,950 mètres=6,398 feet), above S. Alban des Villards in the Combe du Glandon (which they had reached from La Chambre in the valley of the Arc in 4 hours, by way of Monthion), they clambered over the ridge to the right, and gained a gap in the watershed north of the peak in 2¼ hours from the châteaux, whence an hour over loose rocks led to the summit. The view, unfortunately, was concealed by mist. Returning to the gap in 50 minutes,

* Cf. *Alpine Journal*, vol. ix. pp. 96-97. † Ibid. vol. ix. p. 102.

‡ *Peaks, Passes, and Glaciers*, 2nd series, vol. ii. p. 401.

they descended into the Combe du Bens. They passed by the Chartreuse de Saint Hugon and reached La Rochette in $7\frac{1}{2}$ hours from the summit, having been greatly delayed and bewildered by a thick mist.

ALPINE MEETING IN WALES.—It is proposed by some Northern members of the Alpine Club to hold a meeting and dinner at Capel Curig, North Wales, on Saturday, April 19, at 7.30 P.M. (morning dress), in continuation of those already held in Liverpool and Amble-side. The cost of the dinner will be one guinea a head. Intending diners are requested to send notice to Mr. Frederick Gardiner, 48 South Castle Street, Liverpool, as early as they conveniently can, the accommodation at Capel Curig being limited. Some members propose meeting at the Penrhyn Arms Hotel, Bangor, on Friday, April 18, and walking over Carnedd Dafydd to Capel Curig the following day. Capel Curig is most conveniently reached by rail to Bettws-y-Coed, from which village it is five miles distant.

REVIEWS.

PEASANT LIFE IN TYROL.*

It may be thought by some that Mr. Grohman's book lies outside the view of the 'Alpine Journal;' but we are rejoiced to see such a sign that the Club has members who can interest themselves in the mountain people as well as in the mountains. If we all recollected that Switzerland is a country with a history and a constitution as well as a playground, that guides are farmers and citizens as well as human 'litts' to assist tourists to the top story of the Alps, we should perhaps enjoy our holidays more, and our conversation and writings would certainly be less intolerable to those whom some infirmity, mental or physical, debars from our favourite sport.

Mr. Baillie Grohman was already favourably known to the public as the author of a volume on the Tyrolese, which showed some literary talent and a singularly thorough acquaintance with his subject. The present volumes have most of the merits of their predecessor. They bear, however, too many signs of a careless revision in passing through the press, and the author's English betrays here and there that he has lived principally abroad. But it is only an unjust or superficial critic who would dwell exclusively on those surface blemishes in a book which possesses some rare and substantial merits. First among these in the eyes of the general reader will be the fact that Mr. Grohman is always amusing. We follow him, as he runs on with his stories, with the same zest with which in boyhood we pursued one of Mayne Reid's tales of adventure. These are among the subjects of his chapters:—a homely miracle play in a Tyrolese farm-house, a peasant's bath-house, a shooting-match, a pilgrimage, the quaint ceremonies which accom-

* *Gaddings with a Primitive People*, being a series of sketches of Alpine Life and Customs, by W. A. Baillie Grohman, Author of *Tyrol and the Tyrolese*. 2 vols. Remington & Co., 1878.

pany a Tyrolese marriage, a hunt for curiosities (such as a life-size set of the Twelve Apostles). He gives us a very curious description of Pfäfers in 1479 from the MSS. of a visitor of that time, when it seems to have been a sort of German hell, full of gamblers and bad company. But we have no space to pick from our author's pages.

To more studious readers the book may not be without value. Mr. Grohman records a deliberate and apparently well-founded opinion that the influence of the Roman Catholic Church in Tyrol has been injurious—that gross bigotry has been encouraged, so as to lead to lax morality. Moreover, to all interested in old wedding customs, survivals of marriage by capture, and the like the book is full of matter.

Our only serious quarrel with Mr. Grohman is that, having so much fresh and valuable information to give to English readers, he did not, in place of putting together three light volumes, take time and compose one comprehensive book which might have become a standard work on its subject. Is it yet too late for him to set to work with this object? We hope and think not.

JAHRBUCH DES SCHWEIZER ALPENCLUB.*

This volume was to be devoted entirely to the special district. Unfortunately the contributions relating to this were only sufficient for about one-third of an ordinary sized Jahrbuch, and the deficiency had to be made up with 'Freie Fahrten,' of which the Editor had plenty at his disposal. Thanks, however, to the exertions of some zealous members as Heim, Zeller-Hörner, and Muller-Wegmann, the special district is much better represented in the illustrations, more than two-thirds of the 24 large plates being taken from it.

The special district lies chiefly in the cantons of Glarus and Graubünden, and extends from the Bisithal on the west to the Flimserstein on the east, and from the Prägel Pass on the north to Ilanz in the Vorder Rheinthal on the south. The principal mountain mass is that of the Tödi.

The systematic excursions arranged for 1876 and 1877 were mostly hindered by bad weather. Those inserted in this volume, however useful for elucidating the topography, present nothing of novelty except the ascent of the Bifertenstock, by a new route, from the south-east.

The north-west portion of the district, lying between the Bisithal, the Urnerboden, and the Linththal, is almost entirely a limestone plateau, at an average height exceeding 6,000 feet. We have accounts of it from R. Wäber, who crossed it from Stachelberg to the Prägel Pass; from F. Becker, who spent six weeks in surveying it; and from A. Heim. From these articles we can form a good idea of this strange district, called locally 'Schrattenfeld' or 'Karrenfeld.' It is seamed in many parts by the chemical action of water with cracks, now diverging, now parallel, often of great size and depth. Cross lines of cracks

* *Jahrbuch des Schweizer Alpenclub.* Vol. xiii. 1877-8. J. Dalp, Bern.

sometimes form isolated points resembling the séracs of a glacier. Even in the easier parts of this progress is very slow; the more difficult can hardly be crossed even with the help of ropes and ladders.

The map of the special district (1:50000) issued with this volume seems all that can be desired. Prof. Heim, however, in an interesting paper, points out various defects, and makes valuable suggestions for its improvement.

Amongst the 'Freie Fahrten' are excursions in Dauphiné, the Maurienne, in the Central and Bernese Alps; but the most interesting papers are from Herr Déchy and Dr. Paul Güssfeldt.

Herr Déchy, after enumerating the attempts, successful or otherwise, on Mont Blanc from the side of Courmayeur, from that of Sir J. H. Ramsay in 1855 to the successful ascent of Mr. Eccles in July, 1877, proceeds to describe at some length two excursions made by himself. On August 8, 1871, with two guides and a porter, he started from the 'cabane' on the Aiguille du Midi, ascended the Mont Blanc du Tacul, thence passed to the Mont Maudit, and reached the Mur de la Cote in $8\frac{1}{2}$ hrs. Here, as in more than one of the attempts by this route, they encountered a fog and cold wind, which forced them to descend to Chamonix by the ordinary route. On July 28, 1877, Messrs. Déchy and Burgess, with three guides and a porter, slept in the hut on the Mont Blanc glacier (3,150 m.) A snow-storm compelled them to spend July 29 at the hut. On July 30 they started at 2.30 A.M.; the rocks were reached at 8.30, and after a climb made more difficult and dangerous by the new snow the top was reached at 1.35 P.M. Mont Blanc was first ascended from this glacier by Mr. T. S. Kennedy in 1872.

Dr. Paul Güssfeldt, safe home from the dangers of African travel, has lost no time in returning to his beloved Alps. On September 13, 1877, with Hans Grass as guide and Caspar Capat as porter, he ascended the Monte Rosso di Scerscen (3,970 m.), the only unascended high mountain of the Bernina district. The mountain has three peaks, of which the middle one is the highest. Each of these peaks sends out ridges to the north-west, but the ridge from the east peak adjacent to Piz Bernina is much the longest, dividing the Roseg firn from the Tschierva firn and terminating in an abrupt rocky mass, named locally Piz Humor.*

By this ridge the ascent was made. Starting from the Misaun Alp at 4 A.M., the base of Piz Humor was reached at 7.45. Ascending a little up the Roseg glacier, they turned and climbed the snow-slopes to the left. The crest of the ridge was reached at 8.50. Here a formidable rock-wall occupied them for $2\frac{1}{2}$ hrs., tasking their utmost energies to surmount it; this was followed by a still more formidable obstacle, a very steep ice-cliff (he uses the term 'Senkrecht'), which cost $1\frac{1}{2}$ hr's. step-cutting; above this the slopes were easier, but the top was not reached till 4.10 P.M. They had persevered in their rash attempt in the hopes of not returning by the line of their ascent. That they considered impossible. A moment's glance from the summit showed

* Dr. G. limits the Roseg firn to the east of Piz Roseg, that to the west being the Sella firn.

that the hope was vain. The height was observed to be between that of Piz Roseg and Piz Zupo. A record of the ascent was left, a specimen of the stone taken, and they left the top at 4.17, having of daylight and twilight perhaps $2\frac{1}{2}$ hrs. more. The ice-wall was reached at 5, and crossed in 40 minutes. The rock-wall took them an hour. The last snow-slopes were passed in the dark, and the Misaun châlet not reached till midnight.

The German Alpine Club has now 32 huts, the Swiss 27, the Italian 12, and the French 7. Comparisons having been made between the Swiss and German huts unfavourable to the former, it is observed that the German huts, with one or two exceptions, are built below the snow-line, and in situations where in Switzerland there are hotels; whilst the Swiss huts are above the snow-line, and even then are sometimes established as hotels.

There are many articles of interest to which space does not allow a reference.

The project for assuring the lives of guides and porters seems to be impracticable. The men are unwilling to contribute even the least sum; and the companies either refuse to accept them at all or limit them to below the snow-line, which comes much to the same thing.

The new thermometer placed on the Schreckhorn in September, 1876, was observed in August and September, 1877. The readings were:—

	Max.	Min.	Actual
Aug. 25 . .	17°·1	−27°·3	3°
Sept. 29 . .	12°·25	−20°	0°

Herr Roenmund vouches for the accuracy of the first reading; but the wise say that the maximum reading, 17°·1 (Cent.) = 62°·8 (Fahr.), is impossible at that elevation. The latter observers are of opinion that the instrument is not sufficiently protected either from the sun's rays or from the influence of rock and snow, and that the readings, therefore, are exceptional.

At the end of 1877 the club numbered 2,242 members in 23 sections, of which the latest was the section Wildhorn (Saanen-Simmenthal).

ZEITSCHRIFT DES DEUTSCHEN UND OESTERREICHISCHEN ALPENVEREIN.*

The annual volume appeared in three parts. In addition to a number of excursions and scientific articles, it contains an Alpine Bibliography for 1877, and an index to the volumes published by the separate Austrian and German clubs, and also by the united German and Austrian Club, 1863–1877.

* *Zeitschrift des Deutschen und Oesterreichischen Alpenvereins*. Vol. viii. 1877. J. Lindauer: Munich.

The chief scientific articles are—The Glacier of Gurgl, Gen. v. Sonklar; The Hohe Ifen (Algau), A. Waltenberger; the special map of Austro-Hungary, E. Richter; The Rivers of Carniola, W. Urbas; The Building of Mountain Refuges, by J. Stüdl; The Effect of Alpine Climate and Travel, W. Krug.

Amongst the excursions there are accounts of ascents of the Antelao and Tresero, by B. Wagner; the Königspitze, by H. Pfaff; the Piz Bernina, by J. Meurer.

The first ascent of the Matterhorn by a German lady (Miss A. Voigt, of Erfurt) was made in August, 1877, and the first ascent of the Cimon della Pala by a German party in September, 1876. An account of this is given in the first part of the volume for 1878. It was led by Santo Siorpæes, and followed the usual route, but, owing to the time of year, the glacier gave considerable trouble.

The club at the end of 1877 had 63 sections, containing 6,881 members, and had a balance of 13,557 marks. The volume contains eleven illustrations and three maps, amongst which is a new sheet of the special map of the Eastern Alps, the section Schrankogel.

NOTICES.

POCKET GUIDE BOOKS.*—The sections of the Italian club continue to show most praiseworthy energy and ability in the preparation of concise, thorough, and practical handbooks to their own districts. North Italy will soon be the part of the world best provided with such works. The two last forwarded deal with the country between Val Sesia and Val di Orco, the districts of Ivrea and Biella. There is little to choose between them in general completeness. But the Biella handbook is the less adventurous, and speaks in terms of respect, which may seem to hardened climbers exaggerated, of passes like the Lysjoch or the Weissthor. We may venture on one suggestion. It is perfectly true that the Col della Barma d'Oropa commands no general view; but it should be mentioned that from a point east of it, and not fifteen minutes off, the whole chain of Monte Rosa, the Matterhorn, Mont Blanc and the Grandes Jorasses, the Graians and Monte Viso, are well seen. If we make ourselves responsible by recommending the Lysjoch (and the new inn on the Col d'Ollen will of itself make this a common route), we must also suggest a caution to travellers to keep well to the right and away from the Lysekamm in crossing the ridge. In the present state of the glaciers there are some ugly crevasses on the north side near that peak, and travellers getting into them in a fog might easily meet with an accident like that of the Felikjoch. The lower hills between Biella, Val Sesia, and Val de Lys are full of beauty and interest; but few of our countrymen seem hitherto to have followed Mr. Ball's suggestion

* *Guida per gite ed escursioni nel Biellese, compilata per cura della Direzione del Club Alpino: Sezione di Biella.* Biella: G. Amosso, 1878.

Guida Itinerario per le Valli dell' Orco di Soana e di Chiusella, con carta. Casanova, Torino: 1878.

and spent a week of doubtful weather in exploring them. The great sanctuary of Oropa is in particular worthy of notice. All the paths through this region are carefully noted, with times and distances, in the little book before us.

The Ivrean handbook, edited by MM. Vaccarone and Nigra, is equally full of information. One of the lower valleys, the Val Chiussella, is apparently of singular beauty. It has, however, for some of us the fatal deficiency of being a 'corridor that leads to nothing' in the shape of a glacier. To the inner valleys of the Graians no such objection applies. The handbook appears to deal exhaustively and systematically with this region, pointing out what remains to be done in it, as well as the known ascents, and giving the names of such guides as are to be found. It may suggest to an English climber a fortnight's occupation in a corner of which we know little—the south-east end of the Graians. A fair map accompanies the volume.

CAUCASIAN LITERATURE.*—The two German men of science who for many years have made Tiflis their home have both recently added to our knowledge of this region.

Herr Abich has given us a treatise on the Glaciers of the Caucasus and Armenia. The latter are rather like the snakes in Ireland. The only specimen is one which maintains a precarious existence under the shadow of Ararat. The glaciers described as being met with on ordinary roads in popular books of travel are, of course, nothing but winter snow-beds.

Herr Abich confirms his earlier statement that the Khaltschidon Glacier (the Karagam of the 'Central Caucasus') is the largest ice-stream in the chain, descending 500 feet lower than any other Caucasian glacier, and reaching 5,700 feet. He does not appear to be aware that, by a lucky chance, its upper region was explored in 1868 by English mountaineers, and that we have very fair data for an interesting comparison between it and the Aletsch Glacier. Having bivouacked high on its side, we spent three hours in reaching the great icefall, six hours in mastering this, during which we mounted 4,000 feet, and three hours more in traversing the south névé of the glacier to the watershed. Allowing five miles respectively for the distances above and below the icefall, and three miles for the fall itself—moderate estimates—we have thirteen miles, and adding three for the untraversed lower end, sixteen miles would be the total.

The Aletsch is counted by Mr. Ball as fifteen to sixteen miles in length. The Khaltschidon, therefore, is a formidable rival for our Swiss friend. There is, I may add, no scenery on the Aletsch to equal the great icefall of the Karagam, which can only be compared to two Ober

* *Ueber die Lage der Schneegränze und die Gletscher der Gegend im Kaukasus.* Von H. Abich.—'Bulletin de l'Académie Impériale des Sciences à St.-Petersbourg.'

Der Bingöl Dagh. Von Dr. G. Radde.—'Petermann's Mittheilungen,' 23. Band. *Vorläufiger Bericht über die im Sommer 1876 ausgeführten Reisen von Dr. G. Radde.*—'Petermann's Mittheilungen,' 24. Band, No. vii. See also *Die Chuv'suren und ihr Land untersucht im Sommer 1876.* Von G. Radde. Cassel (Fischer): 1878.

Grindelwald glaciers, pouring over side by side, or the majestic expanse of the two upper snowfields backed by the vertical pinnacles which rise on either side the gap through which their overflow finds a way out.

Herr Abich has devoted much attention to the Devdorak Glacier on Kazbek, which, from its effect on the Dariel road, is a subject of practical importance. As I have said elsewhere, several miles of flat ground effectually protect the road from glacial avalanches. The injury is caused by the bursting up and sweeping away by water of the lower end of the glacier, and is in effect similar to the catastrophes of the Hoch Vernagt Glacier in the Eetzthal. The cause is, however, different. The Swiss glacier dams the torrent by crossing its course at right angles. The lower end of the Devdorak Glacier advances from time to time into a narrow gorge, where pressure forces the ice down on the subglacial channels which drain its upper portion. The water thus collected and kept back increases in volume until it bursts through the snout of the glacier, carrying this down with it in a mingled mass of ice and water, which inundates the narrow lower valley and the Dariel gorge.

Herr Radde has written a paper on his ascent and explorations of Bingöl Dagh (12,000 feet), the great mountain mass which, seen from Ararat, towers up among the ranges which encircle the head-waters of the Euphrates, and itself feeds the Kur. The interest of the excursion was chiefly botanical.

His second paper, on an excursion to the head-waters of the Aragwi, and to a pass in the neighbourhood of the Azunta or Schebulos group lying east of the Dariel, on the confines of Daghestan, is more generally important. Herr Radde describes at length the strange rites and customs of the armour-wearing Chevsurs; he says much of the flora, and gives one or two descriptions of mountain panoramas, which excite a desire to follow him. He concludes by a prophecy that 200 years hence 'the Caucasus line' will be one of the routes to India, and that 'the great-grandchildren of Disraeli and Gortschakoff' will meet at an inn bearing for its sign 'To the last of the Chevsurs.'

D. W. F.

HYPSONOMETRY OF FRIULI.—We gladly call attention to the following work, the title of which best expresses its nature and value:—

'Materiali per l'Altimetria Italiana. Regione Veneto-Orientale. Raccolta di 222 Quote d'Altezza rilevate mediante il Barometro nei Bacini del Tagliamento, dell'Isonzo, del Livenza, del Piave, e del Gail, negli Anni 1874-6. Da G. Marinelli, con un Introduzione di G. Cora. Torino, 1878.'

PETRARCH'S ASCENT OF MONT VENTOUX.—In the last volume of this Journal attention was called to the ascent of Mont Ventoux, near Avignon, made by Petrarch in 1335. Alpine readers will be glad to know that in his recent *Life of Petrarch* (in Messrs. Blackwood's series of *Foreign Classics*) Mr. Henry Reeve has translated the Latin letter in which Petrarch recounts his adventure. The poet underwent a sort of conversion on the top of the mountain. The whole account of his very early feat of mountaineering is full of interest, and would have been translated for the Journal had it not been thus made public in a readily accessible form.

PROCEEDINGS OF THE ALPINE CLUB.

A general meeting of the Club took place on December 18. Mr. C. E. MATHEWS, *President, in the chair.*

The following gentlemen were elected members:—Messrs. G. Scriven, W. C. Smyly, W. Little, H. E. Bury, C. E. Layton, and W. O. N. Shaw.

The President congratulated the Club on their first meeting in the newly furnished and altered Club Rooms, and suggested that some of the pictures in the possession of the Club were hardly worthy of their places on the walls. He hoped that a good collection of Alpine paintings might gradually be acquired.

Mr. D. W. FRESHFIELD hoped that the library also might be improved, and announced that Mr. C. C. Tucker had consented to undertake the re-arrangement of the books and maps.

Messrs. F. Gardiner and W. Leaf were elected new members of the Committee vice Messrs. Horace Walker and C. C. Tucker, who retired by rotation. The other officers of the Club were unanimously re-elected.

Mr. W. A. B. COOLIDGE then read a paper on an ascent of the Grand Pic de la Meije. Mr. H. G. GORCH narrated his experience on the mountain.

The President congratulated Mr. Coolidge on his success.

The Annual Winter Dinner took place at Willis's Rooms on Dec. 19.

The usual exhibition of Alpine paintings was on this occasion thrown open to members and their friends during the afternoon. Some two hundred persons, including many ladies, availed themselves of the invitation.

One hundred and forty-eight members and their friends sat down to the dinner. Among the guests were Prof. G. M. Humphry, Messrs. N. Chevalier, H. Curzon, &c.

N.B. The Club Rooms have recently been entirely refurnished. In the Committee Room a map cupboard has been placed, in which, in the course of a few weeks, it is hoped that members may find a tolerably complete and easily accessible collection of Alpine Maps. The library will also be increased from time to time, as the funds of the Club allow. The Honorary Librarian, Mr. C. C. Tucker, will be obliged to any member who will indicate works he may think worthy of purchase. He will be particularly obliged to members who will present such works, or any writings of their own, to the Club.

POSTSCRIPT.—On January 27 Mr. Coolidge, with Ch. Almer, the latter's two sons, and a porter, reached the top of the Gross-Schreckhorn in 8 hrs. 55 min. from the Schwarzenegg hut, returning in 3 hrs. 5 min. The final ridge was alone found difficult, but this, owing to the quantity of snow piled on it, was extremely so. The weather on the summit was warm and mild, scarcely fairly represented by the reading of Mr. Coolidge's barometer, + 2° Réaumur.



THE AIGUILLE DU DRU
FROM THE SOUTH

THE
ALPINE JOURNAL.

MAY 1879.

THE HISTORY OF AN ASCENT OF THE AIGUILLE DU DRU.
By C. T. DENT. Read before the Alpine Club on Feb. 4,
1879.

EVEN in a thoroughly well acted play, a perceptible shudder runs through the audience when two actors draw their chairs down to the footlights, and one of them announces, 'Tis now some fourteen years ago.' Some element of uncertainty is required to keep up the interest—the development of an unknown chain of events. The feeling that, however thrilling the tale to be told, the climax is known, and the heroes sit before us, is apt to make the whole recital fall somewhat flat. To some extent I find myself in the position of the actors, but at least will promise not to follow their example to any great extent. On the history of attempts to ascend the Aiguille du Dru I will touch only so far as it seems desirable that they should be placed upon record.

Nearly five years ago the 'Alpine Journal'* contained what I fear was an unduly prolix narrative of two assaults on the mountain. Striking out a different line to the Messrs. Pendlebury, Kennedy, and Marshall, we made for the south-western or left-hand peak. At that time we were not positive as to which was the higher of the two summits.

In 1874, with two guides, of whom Alexander Burgener was one, we reached the col between the Aiguille du Dru and the Verte, and remained there some time examining the mountain. We looked down over the edge of the ridge on to the Glacier du Nant Blanc, and did not like it. We looked upwards and liked it less. The day was fine, and the rocks in thoroughly good order. I can recall now how our eyes must have wandered over the very route that years after proved to

* No. 46.

be the right one, without any impression of its feasibility being made on our minds. Formidable from this point of view the peak certainly is, and doubly so when seen for the first time. Few, I think, would blame us for questioning the possibility of climbing it.

Between this date and 1878 numerous attempts* were made, so far as I can learn, one and all on the S.W. or lower peak. A gradual conviction seems to have grown up in the minds of those who tried it that this would prove to be the true line of ascent. So thought Mr. E. R. Whitwell; so again Mr. J. Birkbeck, jun., both of whom reached probably a much higher point than we did in 1873. To the subject of this lower peak I shall return again later on, but before leaving it must mention briefly the most remarkable ascent yet made. I speak advisedly—an ascent. Some may perhaps be astonished on learning that the highest point had apparently been reached before we climbed it. Astonishment will give way to admiration when I mention that this successful ascent was effected by a single individual. No word will adequately describe the feelings when it is stated that such is the modesty of this hero that he himself disclaims the honour of having actually attained the summit. From the published accounts (for the record is before the world) we may learn that the climb was effected in this wise.

Starting with no other companions than a trusty rope and an equally reliable axe, our hero ascended by that part of the Glacier de Charpoua which is the most unfavourable, on account of multitudinous intersecting crevasses. Possibly, however, his description, owing to an absence of detail, misleads. Certainly, the narrative is to some degree ambiguous, and it is hard for those who know the appearance of the rocks to understand the line of ascent intended to be described. There may be excellent reasons for this ambiguity: I cannot but think they could be easily supplied. It seems that after a time this second Jacques Balmat left the glacier, got on to the rocks at an impossible spot, and climbed them by an impracticable route. Overcoming astounding obstacles, yet ascending as rapidly and unerringly as if he had been in New Guinea instead of Savoy, he attained (in about half a page) a point whence, he tells us, further ascent was impossible. A vertical wall of rock arrested further progress. But I feel sure that this is only the author's delicate way of putting it. Further ascent was impossible, simply because he was, as shown by the illustra-

* I know of at least six.

tion accompanying his description, on the summit.* To remove any doubt on the subject, he planted a stick and a flag. Incredulity at Chamonix was crushed. 'There,' he said on his return, 'look at my mark, there, on the little step just to the right of the summit.' They gazed through the telescope, and were convinced. Only one, an incredulous artist, of some Alpine repute and experience, stared, like the little child at the Emperor's new clothes, and saw nothing save a dark line of rock and a patch of snow some 20 ft. square. But what of that? How he descended alone; how he fixed his rope in difficult places to a rock and let himself down; how he repeated this performance on other difficult places without previously going up to disengage the cord; how he slipped and fell in such a way that anyone but Zazel—or Mons. Charlet-Stratton—would inevitably have perished—all this and some more is recorded, I say with infinite regret, in the pages of the French 'Annuaire' for 1878. Seriously, such an account may legitimately be questioned and criticised. Apocryphal narratives of this nature tend to bring discredit on our pastime, and are ill reading in so admirable and usually sound a volume as the 'Annuaire.'

Our work on the peak in 1875 may be dismissed very briefly. We tried the north face, and found it impossible, from the Glacier du Nant Blanc, to reach even the ridge between the Dru and the Verte. No other route offers on this side. For the two following years I was unable to visit the Alps.

In July last year, J. Oakley Maund and I arrived at Chamonix with one fixed determination. Either we would climb

* Professor Forbes—as the Editor points out to me—with his usual accuracy distinguished and also measured the two summits, giving their heights respectively as 12,178 and 12,245 feet. ('Travels in the Alps,' p. 119.) Viewed from Chamonix, the lower or S.W. peak appears much the higher of the two summits. From the Montanvert only the lower peak is visible. I only learnt this year that the higher peak can be distinguished from Chamonix, looking like a mere step or inequality in the ridge forming the right-hand outline of the other. The two great upstanding rocks and the arch close to them, described further on, preclude the possibility of a mistake as to the true position of the actual summit. It is perhaps singular that most of the Chamonix guides are unaware of these facts. It is also worthy of notice that the asterisk in the illustration referred to above appears to denote this spot. But even if this were not so, the whole account of this expedition would hardly be worthy of credence on other grounds. If the asterisk is intended to indicate a spot on the lower peak, it is possible to get from there to the top of that peak.

the Dru, or, at the worst, would, as far as in us lay, prove its inaccessibility. By my wish our first attempts were to be made by the old route leading towards the lower peak. And here let me state, lest I forget it, that the weather was on nearly all occasions of such a description that no parliamentary expressions can possibly do justice to it. Time after time we were baulked by snow, wind, or rain. Day after day we sat waiting in vain for the favourable moment, till hope deferred, and a long course of table d'hôte dinners, without exercise, combined to make the heart sick. A couple of fine days would occur, and a start be effected. Then came the rain again, and we had to return, soaked and despondent. What time we were not being rained upon on the Montanvert, we were steaming and drying over Couttet's kitchen fire. On hydropathic principles we found this state of the elements an excellent cure for the mountain fever. Enough! Let me record what we did achieve in the rare intervals of decent weather.

Our first attempt was made with Johann Jaun and Andreas Maurer as guides. A lank-visaged porter, somewhat weak in the joints, who must have echoed Hamlet's interrogation as to the necessity of bearing fardels, carried our tent up to the grass slopes by the Charpoua Glacier. Here are many and excellent camping places. Dried dwarf rhododendron bushes abound, and water is plentiful, especially on the Moine side of the slopes. Leaving the porter at 2 A.M. still in a prostrate condition, we wended our way up the glacier, which was in first-rate order. All were in high spirits at the prospect of, at least, a good climb. Not a bit of it. The rock face over which access to the lower peak is alone possible was covered with snow in the most treacherous condition imaginable. The guides most properly refused to go on, pointing out that to descend in the afternoon, with the snow soft and loosely bound to the rocks would be unwarrantably dangerous. Back we went, therefore, and met the sniggers and sneers of the worthy Chamoniards with an imperturbability bred of long experience.

Twice again within the next fortnight we tried, with the same guides. Result the same, except that we didn't go so far and got more wet. The excellent Jaun now left us, and Alexander Burgener came on as chief guide. Following his advice, a complete change of tactics was adopted. We decided to abandon all idea of attacking the lower peak, and made up our minds to try the higher east summit by our old '74 route.

And now let me digress for a moment and give credit where

credit is due. It is due to the Messrs. Pendlebury's guides, especially, I believe, to Peter Baumann, who, in 1873, on his first inspection, marked out the true line of ascent as far as it was visible. Again, and above all, the whole of our success is due to Burgener's sagacity and great guiding qualities. I knew that any guide was immeasurably superior to an amateur in the knack of finding the way. I was aware that in quickness on rocks the two could hardly be compared. But I had always thought that the amateur excelled in one great requisite—pluck. This record will, I hope, show that in one instance at least this was an error. But for Burgener's indomitable obstinate pluck we should never have climbed the Dru.

Leaving the Montanvert about 1 A.M. we reached the rocks below the col somewhat late, for our route up the glacier was bad. There was a great deal of reconnoitring, and a considerable amount of talking. However we had a good climb, and settled the best route up some part of the couloir leading to the ridge. There was still too much snow on the rocks. A fancied insufficiency of guiding power—a decidedly insufficient supply of rope—and a strong idea that a new route was not to be worked out at a first attempt—combined to drive us back to Chamonix the same evening.

Après cela le déluge—and for a long time all mountaineering was impossible. Desperate were our attempts to amuse ourselves. Lawn tennis, with parti-coloured balls and wooden bats, in front of Couttet's was the fashion for a while. Then we went a cray fishing, Maund driving us to Chatelard in Couttet's basket carriage, and chirrupping pleasantly to an ancient spotted grey steed. Then I chirrupped him back again—and next day the spotted grey was 'très malade,' and my right arm very stiff. Under Maund's able tuition, and following his experienced directions at the fishing ground, we caught nothing.

Then I fell a musing and studied human nature, and wondered at the various imperfections of development the muscle, known to anatomists as the gastrocnemius,* could exhibit in the legs of our countrymen, and marvelled why they took such pains in their costume to display its usually unsymmetrical proportions; and wondered why Couttet's barometer kept on rising, and pondered over—. Suffice it that at last Maund, to my infinite regret, left, from motives of fraternal duty,

* Described in anatomical text-books as forming the swelling of the calf.

coupled with the rooted conviction that the rain would probably go on till the winter snows came.

And so it came to pass that with J. W. Hartley, and Alexander Burgener, and Andreas Maurer, as guides, I found myself one August day at a new and improved camping place, a good deal higher than our old bivouac. We left it at 3.45 A.M. and got early on to the rocks. A tremendous day we had. Bit by bit the best routes were worked out. Snow still lay thick everywhere. The rocks themselves were fearfully cold, and glazed with thin layers of slippery ice. It was a day of exploration. First the guides climbed to the col. Then Burgener and I climbed ropeless to the same spot. To those in search of excitement I recommend above everything these rocks when glazed. But for a growing conviction that the upper crags were not so bad as they looked, we should never have persevered that day. We reached at last a great knob of rock close to the col, and for a time Burgener and I sat alone, silently staring at the precipices of the upper peak. This was the turning-point of our year's climbing. Up to that moment I had only felt doubts as to the inaccessibility of the mountain. Now a certain feeling of confident elation began to creep over me. The aspect of a mountain varies marvellously according to the beholder's frame of mind. These same crags had been, at one time or another, deliberately pronounced impossible by each of us severally. Good judges had ridiculed the idea of getting up them. Yet, somehow, they looked different that day. Here and there we fancied we could trace short bits of practicable rock. Gradually, uniting and communicating passages developed themselves. At last we turned and looked at each other; the same train of ideas had been independently coursing through our minds. Burgener's face flushed, and we rose almost together, exclaiming 'Es muss möglich sein.' The rest of the day was devoted to bringing down our ladder from the col to a point much lower and nearer the main peak. Then followed one of the nastiest descents I ever experienced. We had made our way over the great snow patches, for the stones fell too freely in the couloir to render that safe. At one time we had 150 feet of rope paid out between one position of comparative security and the one next below it. One step, and the snow would crunch up healthily and give good hold. The next, and the leg plunged in as far as it could reach. Yet another, and a layer of snow, a foot deep, would slide hissing off, and expose bare black ice beneath, or treacherous loose stones. Not till 9 P.M. did we reach Chamonix. But I had seen all I wanted, and now I

would have staked my best hat on the possibility of climbing the mountain. The usual atrocious weather which kept us back after this attempt was in consequence doubly vexatious.

Perhaps the monotonous repetition of failures on our peak influences my recollection of what took place subsequently. Perhaps—as I sometimes think, even now—an intense desire to accomplish our ambition, ripened into a realisation of actual occurrences, which really were only efforts of imagination. Anyhow when, on September 7, we once more sat before the camp fire, I could hardly persuade myself that so much had taken place since the attempt last mentioned. It seemed but a dream, whose reality could be disproved by an effort, that we had gone to Zermatt in a storm, and hurried back again in a drizzle; that we had left Chamonix and tried the peak again in a tempest; that I had returned to England utterly dispirited and downcast; that I had posted back after forty-eight hours' sojourn in my native land, on receiving by telegraph the welcome intimation that the weather at last looked promising. A confused jumble and whirl of thoughts crowded the brain. I heard the parting farewell from our pleasant party as the diligence lumbered away from Chamonix; this was chased away by the slow heavy clank of the railway carriages entering the station. I rubbed my eyes and looked up. Was that the Dru clear and bright above? The outline seemed strangely familiar. Surely that was Hartley there, occupied in the congenial employment of greasing his face with the contents of a little squeeze-bottle—and there was Burgener. But what was this shapeless sleeping mass? Gradually it dawned on me that I was but inverting a psychological process and trying to make a dream out of a reality. Hartley was there; Burgener was there; and the uncomely bundle was the outward form of the most incompetent guide in the Alps. Not till after did we learn that our friend had previously distinguished himself with Maund on the north face of the Breithorn. Not till the next day did we fully realise how bad a guide might be. We kicked him and he awoke. Then he made the one true remark I heard him utter. He said he had been drunk the day before. Then he relapsed; and during the remainder of the time he was with us enunciated nothing but falsehoods.

From four in the morning the next day till seven in the evening when we reached our bivouac again, we worked incessantly. Not so the Driveller—for so we christened our new guide appropriately. Hartley dragged him up the glacier. Twice we pointed out to him half-hidden crevasses, and twice

he acknowledged our courtesy by disappearing into them. Finally on the rocks we unroped and let him be. For seven hours he crouched under a little rock, not daring to move up or down, or even to take his knapsack off his back.

For the first time on this occasion we climbed above the col and bore off to the left on to the real rock peak. At first it was easy, but progress was distressingly slow, with only one guide and a short rope, for the Driveller far below had most of that commodity encircling his person. Hartley must have enjoyed his day. Unfortunately for him he was by far the lightest member of the party. Accordingly, we argued, he was less likely to break the rickety old ladder than we were. He was the lightest, so he was most conveniently lowered over nasty places when they occurred.

In the good old times if you wanted your chimneys swept you summoned a master sweep. This worthy would come attended by a satellite, in the shape of a boy. The boy was of such size and shape that he fitted tolerably tightly into your chimney. He then clambered up and did the work, while the master sweep remained below to encourage, preside over, and subsequently to profit by his apprentice's exertions. On much the same principle did we climb this part of the mountain. Hartley was the boy, while Burgener and I, however unworthily, enacted the rôle of the master sweep. Gallantly did our friend fulfil his duties. Whether climbing up a ladder slightly out of the perpendicular, leaning against nothing, and with overhanging places above; whether let down by a rope tied round his waist so that he dangled like the sign of the Golden Fleece outside a haberdasher's shop; or hauled up before he was ready, with his raiment in an untidy mass round his neck; in each and all of these exercises he was equally at home; and would be let down or would come up, smiling. Over one place, where Burgener and I exerted ourselves to the utmost to hold the ladder against a slightly overhanging rock-face, with an ugly-looking bunch of great icicles above, we must have spent an hour. On a later occasion by a deviation of about fifteen or twenty feet we climbed to the same spot in a few minutes with perfect safety, without using any ladder.

Once more, on September 11, and for the last time, we sat on the rocks just above the camping place. Never had we been so confident of success. Instructions had been given to our friends below to look out for our appearance on the summit between 12 and 2 P.M., the next day. Hartley had brought a weakly little stick which, it was arranged, was to

crown our labours, and decorate the summit, on the morrow. But the old source of disquietude harassed us. Our eyes turned anxiously to the west. There, a single huge belt of cloud hung heavily right across the sky—livid in colour above, but tinged of a crimson red below. Hartley was despondent at the prospect it suggested. But perhaps its very watery look hinted to my mind that it might be a Band of Hope. From below the smell of savoury soup was wafted gently up,

‘Stealing and giving odour.’

We took courage, then descended and took sustenance.

At 4 A.M. on September 12 we left. Kaspar Maurer, younger brother of Andreas before mentioned, now accompanied us, for our old enemy the Driveller had been sent away with a flea in his ear—an almost unnecessary adjunct, as anyone who had slept in the same tent with him could testify. Notwithstanding that Maurer was ill, we mounted rapidly, for the way was tolerably familiar, and we all meant business. Our position now was this. By our exploration of September 8 we knew that from the col it was possible to ascend to a considerable height on the main mass. Again, from telescopic observations and the slope of the rocks we were certain that the final arête was easy. Immediately above the col the only choice was to cross over rather on to the south-east face while ascending. A projecting buttress of rock, some two or three hundred feet in height, cuts off the view on to the face from the col. We hoped by turning straight up behind this to hit off the arête just above the point where it merges into the precipitous N.E. wall. The rocks behind this buttress are visible only from near the head of the Charpoua Glacier, but we had never properly examined them.

We followed the couloir running up from the head of the glacier, keeping well to the left to a little below the col. At this point it became necessary to cross the couloir, and for that purpose we employed the long ladder, which we had placed in position the day before. Right glad were we to see the rickety old structure, albeit it creaked and groaned dismally under our weight, and ran its splinters into our persons at all points of contact. Yet there was a certain companionship about this same weather-beaten ladder, and I felt as if it was almost a hardship that it could not share more in our promising success. Next we fastened a double rope, about 20 ft. in length, and swung ourselves down a rough cleft as if we were barrels of split peas going into a ship's hold. Up again, and the excitement waxed stronger as we neared the doubtful part. Then

Alexander lay flat on his stomach, and wriggled round a projecting rock, disappearing suddenly from view. We followed, progressing like the skates down the panes of glass in an aquarium tank, and found ourselves huddled together on a little ledge. An overhanging rock above compelled us to assume the anomalous attitudes enforced on the occupant of a little-ease dungeon. What next? An eager look up, and part of the doubt was solved. There was a way—but such a way. A narrow flat couloir, its angle plastered with ice from top to bottom, invited, or forbade, further progress. Above, a pendulous mass of great icicles, black and long like a bunch of elephants' trunks, crowned the gully. We tucked ourselves away on one side, and the guides performed the best feat of rock climbing I can imagine possible. Unroped they worked up, hacking out the ice, their backs and elbows against one sloping wall and their feet against the other. The masses of ice dashing down, harder and harder as they ascended, showed how they were working. Suddenly a slip above—a shout—a crash of falling ice. Then a brief pause, broken after a few minutes by a triumphant yell from above, and the end of a rope dangled down close to us. Using this latter aid considerably, we mounted and found the top of the couloir blocked up by a great overhanging boulder, dripping still where the icicles had just been broken off. 'Come on,' said voices from above. 'Up you go,' said a voice from below. I leaned as far back as I could, and felt for a hand-hold. There was none. Then right, then left—still none. So I smiled feebly, and said, 'Wait a minute.' Thereupon, of course, they pulled with a will, and struggling and kicking like a spider irritated with tobacco smoke, I topped the rock gracefully. How the first man did it, is, and always will be, a mystery to me. Then we learned that a great mass of ice had broken away under Maurer's feet while in the couloir, and that he must have fallen had not Alexander pinned him to the rock with one hand. From the number of times that this escape was described to me during the next day or two I am inclined to think it was a near thing. 'The worst is over,' said Alexander. I was glad to hear it, but, looking upwards, had my doubts. The higher we went the bigger the rocks seemed to be. Still there was a way, and it was not so unlike what I had often pictured.

Another tough scramble, and we stood on a comparatively extensive ledge. Already we had climbed more than half of the only part of the mountain as to the nature of which we were uncertain. A few steps on, and Burgener grasped me suddenly by the arm. 'Do you see the great red rock up yonder?'

he whispered, hoarse with excitement; 'in ten minutes we shall be there, and on the arête—and then——' I felt that nothing could stop us now; but a feverish anxiety to see what was beyond, to look on to the last slope, which we knew must be easy, impelled us on, and we worked harder than ever to overcome the last few obstacles. The ten minutes expanded into something like thirty before we really reached the rock. Of a sudden the mountain seemed to change its form. For hours we had been climbing the hard dry rocks. Now these appeared to vanish, and—blessed sight—snow lay thick, half hiding, half revealing the last slope of the arête. A glance showed that we had not misjudged. Even the cautious Maurer admitted that as far as we could see all was well; but he added, 'Up above there, possibly——' And now, with the prize almost within our grasp, a strange desire to halt and hang back came on. Alexander tapped the rock with his axe, and let out his pent-up excitement in a comprehensive anathema of Chamonix guides. Already we could anticipate the half-rad feeling with which we should touch the top itself. The feeling soon gave way. 'Forwards' we cried, and the axe crashed through the layers of snow into hard blue ice beneath. A dozen steps, and then a bit of rock scrambling; then more steps along the south side of the ridge—some more rock, and we topped the first eminence. Better and better it looked as we went on. 'See there!' cried Alexander, suddenly; 'the actual top.' There was no mistaking the two huge stones we had so often looked at from below. A few feet below them, and on our left, was one of those strange arches formed by a great transverse boulder, and through the hole we saw blue sky. Nothing could lie beyond, and, still better, nothing could be above. On again, while I could hardly stand still in the great steps the leader hacked out. A short troublesome bit of snow-work followed, where the heaped-up cornice had fallen back from the final rock. Then Hartley courteously allowed me to unrope and pass him, and in a second I clutched at the last broken rocks, and hauled myself up on to the flat sloping summit. There for a moment I stood alone, gazing down on Chamonix. The dream of five years was accomplished. The Dru was climbed.

Our first care was to level the telescope in the direction of Couttet's hotel. There was not much excitement there, but in front of the Imperial we were pleased to think we saw somebody gazing in our direction. Accordingly with much pomp and ceremony the stick (which I may here state was borrowed without leave), was fixed up. Then to my horror Alexander

produced from a concealed pocket a piece of scarlet flannel, like unto a baby's undergarment, and tied it on. I protested in vain. In a moment the objectionable rag was floating proudly in the breeze. Determined that our ascent should not be questioned by any subsequent visitors, we left the following articles: One half-pint bottle containing our names, preserved by a paper stopper from the inclemency of the weather; two wooden wedges (use unknown), two ends of string, three burnt fuses, divers chips, one stone-man, the tenpenny staff and the infant's petticoat.

Of the view I can say but little. I remember that Chamonix looked very nice from this distance. I remember that the Aiguille Verte seemed much less above us, and the lower peak much more below us (at least 80 ft.), than we had expected. Anyhow, I know that the comparative meagreness of the panorama did not affect our spirits, nor detract from the completeness of the expedition. The Dru is essentially a mountain to be climbed for its own sake. After three-quarters of an hour, i.e., at 1.15 P.M., we turned to descend, and very difficult the descent proved. In three places we fixed ropes to assist. Two of these still hang on the rocks, are securely fastened, are new club ropes, and will be found very serviceable in indicating the right route. We followed precisely the same line of rocks as in the morning, and noticed few, if any, places where this route was capable of improvement or even alteration. Not till nearly five o'clock did we reach our abandoned store of provisions, and very short work we made of them. Since ten in the morning we had partaken of nothing but one crushed sandwich. Ignoring the probability of being benighted on the rocks we caroused merrily on tinned meat and seltzer water. The sun was sinking low behind the Brevent range, and the rocks were all darkened in the grey shadows ere we packed up and resumed our journey. Very little time was lost in descending. But before we had reached the breakfast place at 7 P.M. darkness had overtaken us. When within a few feet of the glacier the mist, which had been long threatening, swept up from below and cut off all view. The crevasses just by the top of the glacier were so complicated, and the snow bridges so fragile, that we decided not to go on. So we sat down under an overhanging rock, and made believe that we enjoyed the fun. Hartley somewhat transparently imitated the action of a man going to sleep. The guides, as was their wont when inactive, wrangled over the dimensions of the different chamois they had shot, each of course outvying the other. Meanwhile I considered what I

would have for breakfast next day, and finally stirred up Hartley. For two hours or so we discussed with some warmth the relative merits of kidneys and 'ferras' as articles of diet. Meanwhile the temperature sank, and slowly and gradually we became exceedingly chilly and uncomfortable. The end came sooner than we expected. By the time that Alexander had, in imagination, shot a chamois about the size of an elephant, and I had nearly carried my point about the kidneys, and was passing on to the subject of fried eggs, the mist lifted and disclosed the glacier feebly lit up by the rising moon. Instantly we sprang to our feet, and fondly imagined that an hour or so would see us back at the camp. Not so, however. The snow was all hard frozen, and in the dim light it was found necessary to cut steps nearly the whole way down the glacier. From 9 P.M. till 2.30 A.M. on the morning of the 13th, were we thus occupied. Charmingly comfortable was the tent that night. From the circumstance that the invariable struggle for the best pillow was unusually brief, and that Hartley did not dispute my final proposition that kidneys, if not cooked à la brochette, were to all intents and purposes wasted, I am inclined to think that we were not long in dropping off to sleep. By nine o'clock, however, we were at the Montanvert, where my old friend the landlord received us with more than his usual affability. Champagne was produced, for our success had already been reported, and notwithstanding that the summit is invisible from the inn, mine host was pleased to give us credit for telling the truth. Not so, however, the other Chamonix guides, many of whom maintained that we had merely reached a point on the south-east face of the lower peak. In spite of, or perhaps in consequence of, these early libations, we skipped down with more than our wonted nimbleness, and by 10 o'clock we were at Chamonix. There, I am pleased to record, the first man to congratulate us was M. Loppé, without whose kindly sympathy and constant encouragement I doubt if we should have ever persevered to our successful end.

Those who follow us, and I think there will be many, will perhaps be glad of a few hints about this peak. Taken altogether, it affords the most continuously interesting rock climb with which I am acquainted. There is no wearisome tramp over moraine, no great extent of snow fields to traverse. Sleeping out where we did, it would be possible to ascend and return to Chamonix in about 16 to 18 hrs. But the mountain is never safe when much snow lies on the rocks, and at such times stones fall freely down the couloir leading up from the head of the glacier. The best time for the expedition would

be, in ordinary seasons, in the month of August. The rocks are sound, and are peculiarly unlike those on other mountains. From the moment the glacier is left, hard climbing begins, and the hands as well as the feet are constantly employed. The difficulties are therefore enormously increased if the rocks be glazed or cold, and in bad weather I should think the crags of the Dru would be as pretty a place for an accident as can well be imagined.

The lower peak I am certain can be climbed, but not by the tempting couloir which runs up between the two points. This may be followed for some distance, but then it will, I believe, be found best to bear off to the left. I know this way has been repeatedly tried, but then so had our line of ascent. Every bit of the mountain must be explored before any final conclusion as to its inaccessibility from this side is come to. It would be feasible to lower oneself down by a long rope from the higher on to the lower peak, and very probably the way down from this latter might prove easier than the way up. Let anyone in search of excitement insure his life and try. I am not sure that I should care to do so. If there be much snow on these lower rocks, as there was during the greater part of this last season, their ascent will be unjustifiably dangerous.

One remark in a former paper on this mountain should be here corrected. There, I stated (and it was my belief till last year), that we, in our second attempt, were very near the summit of the lower peak. I must plead guilty to an egregious mistake. We were probably not very much above the level of the col.

Ideas as to what is fair in mountain climbing are somewhat peculiar. I have been asked repeatedly whether we used 'artificial aid' in the Dru. Now by artificial aid seems to be meant driving in pegs into rocks where there is no hand or foot hold. Such a proceeding is considered highly improper. To cut a step in ice is right, but to do anything of the sort on rock is in the highest degree immoral. Again, a ladder to bridge a crevasse may be used without animadversion, but its employment over a rock cleft is tabooed. In fact, anything but hobnails, rope, axes, and a ladder for a bergschrund is 'artificial aid.' Rockets and target practice in general at rock peaks is usually only mentioned to be condemned, while grapnels, chains, and crampons are the inventions of the fiend. Why this should be so is hard to see. Perhaps we must not consider too curiously. For my own part if it could be proved that by no possible means could a given bad passage be tra-

versed without some such aid, nor turned by another route, I should not hesitate to adopt one of these expedients. At the same time I believe that no such place exists. Emphatically I say that this is the case on the Aiguille du Dru. We used our ladders repeatedly and frequently, but only to shorten our way up, while exploring the mountain. When we actually climbed it we used one ladder in one place, and this particular place could have easily been turned by descending some little way and remounting by another route. We saved perhaps an hour by the use of the ladder; an hour late in the season is invaluable. Those who follow will find for themselves the truth of what I state; and if they can climb the peak without 'artificial aid,' they will at least give us the credit for being able to do likewise. We have only shown one way up. There may be a dozen others, though I doubt it. In descending we noticed only a few places where the route would be easier. Still in a first ascent late in the season there is little time for deliberation. Promptness is essential, and the line chosen has often to be followed when the climbers are conscious that it is far from the easiest.

My task is nearly done. Space, and consideration for my readers, alike forbid any account of the festivities that took place at Couttet's in the evening. I believe there were fireworks; I rather think some cannon were let off. I am under the impression that a good many bottles were uncorked. Perhaps this last may be connected with a hazy recollection of all that actually took place. Yet visions as of dancing forms in the salon rise up, with the villagers and guides crowding at the windows to witness the graceful exercise of valseing in thick boots; and there, in the midst of the throng, I seem to see Maurer, resplendent in a shirt the front of which was like unto a petrified bath towel, a coat many sizes too large, his face beaming with smiles, and shining from the effects of drinks offered hospitably on all sides; close by, Alexander, displaying similar physiognomical phenomena, his natural free movements hampered by the excessive tightness of some garments with which an admirer of smaller girth had presented him, yet withal exceedingly well pleased with himself. Let us leave them there. They did their work well, and may be pardoned for a little swagger.

The days grow shorter apace; the sun has barely time to make the ice-fields glisten ere the cold shadows creep over again. Snow lies thick on ledge and cranny, and only the steepest mountain faces show dark through the powdery veil. Bleak night winds whistle around the crags, and whirl and chevy the

wreathing snow-clouds, making weird music in these desolate fastnesses. The clear satiating air, the delicate purity of the Alpine tints, have given way to fog, mist, slush, and smoke-laden atmosphere. Would you recall these mountain pictures? Draw close the curtains, stir the coals into an indignant crackling blaze, and fashion in the rising smoke the mountain vista. How these scenes crowd back into the mind, with a revivability proportionate to the impression originally made! What keener charm than to pass in review the memories of these simple, wholesome pleasures; to see again, as clear as in the reality, every ledge, every hand and foot hold; to feel the fingers tingle and the muscles instinctively contract at the recollection of some tough scramble on rock or glacier?

I have endeavoured to give the impressions made by our expedition. I only wish that anyone could derive a hundredth part of the pleasure in reading that I have had in writing them.

AN ASCENT OF THE TÄSCHHORN FROM THE FÉE GLACIER.

By the REV. F. T. WETHERED. Read before the Alpine Club on March 4, 1879.

THE Saas Grat, which within the memory of Professor Forbes was scarcely known to mountaineers, remains even now insufficiently explored, and yet there is no district which includes a greater number of first-rate glacier expeditions than that extending from Monte Rosa to the Balferin.

It is not the object of a paper like this to usurp the function of a local guide-book; but, as I am anxious to draw special notice to the varied attractions of this glorious range, as well as to the neighbourhood of Saas in general, I trust that I may be pardoned if I dwell very briefly—before starting on my climb—upon the general configuration of its peaks and passes, and if I touch upon some other interesting particulars connected with the Saas Thal. Take, in the first place, its passes (the heights are reduced from the mètres of the Federal map into English feet). The Dom Joch, estimated at 14,062 ft., is the highest purely *Swiss* pass; and is only inferior in height to the Sesia Joch, the Lys Joch, and the Col de la Brenva, in the whole Alps.

The Nadel Joch, set down by the same authority at 13,672 feet, would, as Mr. Foster says, be a 'grand pass if it were not dwarfed by its rival.' The Mischabel Joch (from whose summit I enjoyed one of the most splendid double views I ever

had from a col, on August 1 last) is 12,652 ft., whilst the Adler and Alphubel (both over 12,000 ft.) as well as the Gassenried, the height of which is about 12,050 ft. although not noticed on the Federal map at all, are highly interesting passes. Nor are the peaks, which these passes divide, unworthy of their connecting links. The Rympfischorn, the Strahlhorn, the Allalein, the Alphubel, and the Balferin, are all easily reached in crossing the cols between them, and each admits of variation of route, as I have myself proved on two of them. The *pièces de résistance*, however, of this range are of course the Grosse Mischabel Hörner, including the Dom, or Grabenhorn, (which at 14,942 ft. is the highest mountain wholly in Switzerland); the Täschhorn (14,758 ft.), which is certainly not lower than third on the *Swiss* list; whilst the Nadelgrat, with its pair of sentinel peaks, acts as an advanced northern guard to the great *massif*. From this group the ridge bends round to the NE., rises in the Ulrichshorn (or Klein Mischabel), and terminates in the Balferinhorn overlooking Visp. Thus composed—and intersected by a glacier system such as the Findelen, the Allalein, the Fée, and the Gassenried—the Saas Grat holds a position of the highest order amongst Alpine watersheds.

It will take time, however, before Saas will compete on equal terms with Zermatt. The Matterhorn and its weird associations possess, of course, attractions peculiarly their own, and I am certainly not the man to depreciate the sister valley. Albeit, for loveliness of situation and splendour of near view, there is no hamlet to correspond with Fée in the Zermatt neighbourhood.

Not long ago a gentleman, who spent some weeks at Saas in 1872, wrote me a letter in praise of this district. After dilating upon its charms, he added: 'But there is yet another inducement for the visitor to seek Saas, viz., a famous iron spring, which, from want of funds, has not been made use of for years. Those who are cognisant of the great change which has come over the value of the property in the Aarthal,' he continues, 'known by the name of the Apollinaris Spring, can easily imagine how the patronage of a few medical men might improve the property at Saas.'

As a centre for mountaineers it would be difficult—the valley of Zermatt excepted—to find its equal. In common with the latter, the Saas Thal is rich in attraction for climbers on either side of it. The mountains on its eastern watershed, though not to be compared with the Mischabel in the general attraction which they offer to climbers, command splendid

views of the Saas Grat opposite, whilst its passes are by no means unimportant in interest.

The Rossbodenhorn (or Fletschhorn proper) ought not to be omitted from the 'list' of any active member of the club, either as a *fait accompli* or else as a climb in store; whilst the Laquinhorn and Weissmies must be ascents within the compass of moderate mountaineers. The Fletsch Joch, the Laquin Joch, the Zwischenbergen Pass, the Rossboden Joch, the Simmeli Pass, and the Gamsler Joch,* varying in respective difficulty (the two last in conjunction with the Sirvolten Pass across the E. ridge of the Nanzenthal, and lying to the N. of the Sirvoltenhorn), will take the traveller over to the Simplon Road.

There are many charming walks of a less enterprising character in the neighbourhood of the village, amongst which the Trift Grätli (a spur of the Trifthorn), immediately at its back, is deserving of special notice; whilst, to return to the W. side of the valley, the Egginhorn and Mittaghorn are each within an easy day from the hotel, and are strongly recommended for the grandeur of their views in a note made last year in the hotel book by a member of the club.

Last, not least, the neighbourhood of Saas is highly interesting from an historical point of view, in connection with the Saracenic invasions of the tenth century, as many of my hearers are probably aware; and it is to the *mountain* nomenclature of the valley that the historian is largely indebted for his clue to research. 'Allalein' (Ā'la'lain, 'very lofty of the fount'), 'Alphubel' (Alfu'abl, 'a thousand blocks'), 'Mischabel' (Ma'wi'lshibl, 'abode of the whelps'), and 'Balferin' (Bau'u'lfari'ain, 'slope of the two peaks'), are instances well in point; whilst, in the words 'Almagel' ('the halting place'), 'Distel' (Dí'lsatal, 'possessor of the eagle'), and 'Eien' (Ain, 'eye, source—of stream'), we have also indications of a Moorish origin.† Nor is it remarkable that the Saracens should thus have left their traces upon this quarter of the Alps, for we have it on the authority of Bishop Liutprand, of Cremona, that these marauders secured a position of some years' permanence along the whole Alpine chain, in the year 942 A.D., the Great St. Bernard and the Septimer Passes being the two they principally used. From these they carried on raids upon the adjacent districts, although for the most part living peaceably

* See 'Alpine Journal,' vol. vii. pp. 215, 216.

† I am indebted to Mr. Nicholl (of Balliol College), the Lord Almoner's Professor and Reader of Arabic, at Oxford, for the above *conjectural* derivations from the Arabic.—F. T. W.

and intermarrying with the women of the country. It appears that Hugo, King of Italy and Count of Provence, had a formidable rival in one Berengar, Marquis of Ivrea, who was, however, at that time north of the Alps; and, in order to put an obstacle in the way of his return, the king, who had been laying siege to Fraxinetum,* where the Saracens had taken up their head-quarters, concluded a treaty with them, to the effect 'ut Saraceni in montibus qui Sueviam atque Italiam dividunt starent.'† Hence the Arabic sounding names in the Saas Thal, and 'Pontresina' ('Ponte Saracena'), in the Engadine Alps, not far from the Septimer Pass; whilst we touch upon them again in the family name of 'Saratz,' at Pontresina itself.‡

In the first volume of the 'Alpine Journal' Mr. Coutts Trotter writes that his party, on their way to the Mischabel Joch, in 1862, 'examined carefully the cliffs of the Täschhorn and Dom, in order to see whether it appeared possible to climb the, at that time, unascended Täschhorn from its eastern side, and that they came to the conclusion that it was probably not impossible, though the climb would doubtless be very long and very steep.' To these remarks Mr. George, then the editor of the 'Journal,' appended a foot-note: 'The eastern side of the Mischabel Hörner could never be climbed unless when the rocks were denuded of snow, which very seldom happens.' Mr. Whymper also seems to have been impressed not a little with their formidable appearance from the slopes of the Weissmies, in 1860. 'The peaks seemed to me then,' he writes in 'Scrambles' (p. 4), 'hopelessly inaccessible from this direction.' Such surmises and vaticinations have been lulled to rest—with many another Alpine prophecy—by the course of subsequent events.

The eastern face of the Dom was successfully ascended in 1875 by the Messrs. Puckle, and the corresponding problem solved on the Täschhorn by Mr. P. Watson and myself in the summer of the following year. I have no hesitation in saying that the rocks on the Saas side of these mountains offer some of the finest climbing in the Alps.

At Zermatt, one early day in August 1876, Watson and I made solemn compact to meet at Saas the next Saturday even-

* Fraxinetum is situated between Fréjus and St. Tropez.

† See Liutprand, *Antapodosis*, bk. v. cap. xvii.

‡ See, however, on the subject of this paragraph, the Editor's Note on the Saracens in the Alps, at the end of this paper.

ing. The 'Monte Moro' hotel was, of course, our trysting-place; our project, a return into the Zermatt valley over the summit of one of the Mischabel 'Twins.'

After a successful time at Zermatt, I set off on the morning of August 5 for the Adler, with Laurent Proment of Courmayeur as sole companion. The weather was fine; the views were glorious. So fine was it, that on the way we effected an ascent of the Rympfischhorn by a variation from the ordinary route, striking the Rympfischwänge rocks not far from the base of the col.

The moon shone brilliantly along the Saas Grat range as we entered the village between 9 and 10 P.M., and the Mischabel giants, with the Fée Glacier at their base, were beautiful 'beyond compare.'

Watson, who had turned up in Saas the day before, had beguiled his waiting hours by ascending the Rossbodenhorn. Having long before our arrival given me up as faithless, he had acted accordingly and sloped off to bed, but goodnaturedly insisted on turning out and giving me my supper.

Next morning plans were discussed. Alexander Burgener, Watson's guide, counselled us to give up all thought of the Dom and 'go in' for a maiden ascent of the Täschhorn from this side. A careful examination of the rocks, the previous winter, had disclosed a route which in their present favourable condition would, he was confident, land us on the summit.

An additional guide, one Benedict Venetz, of Stalden, whom I have pleasure in recommending, and a sturdy local porter for the transport of blankets and provisions to the Gletscher Alp, made up our contingent to six in all, and shortly after 4 P.M. we meandered in single file up the corkscrew path which leads through the woods to Fée. The curious 'stations' for which this path is famous, erected on rocks, the striations on which give evidence of glacial action in bygone years, terminate at last in a votive chapel containing all manner of wax models—hands, arms, legs, &c.—the votive or propitiatory offerings to Our Lady, made by her thankful or suffering devotees. A pilgrimage, I believe, is annually made to the shrines by the surrounding peasantry on a certain holy day of the Church, and a solemn function ensues.

Ere long, as we wended our upward way, the most majestic mountain circle that I ever yet beheld burst into sight. The vast glacier of Fée lay extended right and left before us; under our feet were countless wild flowers, which, even thus late in the Alpine season, fringed the footpath in such profusion that I gathered, from mere curiosity, five-and-twenty different

specimens without leaving it for more than ten yards at a time. The village of Fée is rightly named. No 'fairy' enchantress ever conjured up such splendid battlements as those which environ this charming spot. As we passed through its long narrow street the villagers, lounging about in holiday costume, were enjoying quietly their day of rest, whilst a few were keenly disporting themselves in an innocent game at bowls. The smiling meadows around would, perhaps, be almost outraged by the introduction of an hotel in their midst; and yet, unhalloed as the idea may seem, I cannot imagine, for the life of me, why the 'fairies' have had it all their own way hitherto, in this respect! Will no mortal, more matter of fact than the rest, supply a deficiency which is largely felt? Amidst an amphitheatre of 'everlasting hills' more perfect than any mere imagination can paint, Fée stands forth a very paragon of loveliness, altogether unsurpassed in Switzerland.

From the Hinter Allalein to the Ulrichshorn and Gemshorn a scene presents itself which *my* pen at any rate shall not desecrate by attempting a written description. As we reached the Gletscher Alp, two hours after leaving Saas, some blooming milkmaids vacated one of the milk-châlets in our favour, and we got a very comfortable shake-down on the hay. The bold cliffs of the Mischabel, as they towered behind our sleeping quarters that night, are not likely to be forgotten by those who saw them.

Two o'clock next morning found us once more on the move. The Täschhorn had been with us in our hurried dreams, and was finally adopted as our pass to Zermatt. The Dom from the Gletscher Alp seemed too long altogether, unless we were prepared to sleep on the top; and, moreover, the probability of falling stones on its face was by no means inviting. Alexander, however, thought that the Täschhorn would not trouble us with such projectiles.

Our mountain seems to have been 'under a cloud' when Mr. Foster made his first advance upon the Dom Joch in 1869, for, 'singularly enough,' as he says, it was overlooked by his party altogether on that occasion. As a result of this missing link they found themselves, when too late to retrace their steps for the former col, making for the Nadel Joch, which was crossed to Randa; the Dom Joch reserved for another day. Fortunately the weather or the 'fairies' befriended us, and we experienced no such difficulty in our search for glory in 1876. Framed between the Dom Joch and Mischabel Joch, the great peak rose defiantly from his basement of ice, and there was no possibility of mistaking his

identity. Following the route of the Mischabel Joch for some distance, we bore to the right on approaching the rocky ridge descending from the Alphubel, which those who know the glacier will easily recognise. Wending our uneven way amongst a labyrinth of beetling seracs and huge crevasses, into which this portion of the glacier is broken, we made straight for the foot of the Täschhorn rocks.

The weather by this time had materially improved, and our hopes of success ran high.

The course we had to follow, although tortuous and somewhat involved, was for a while not difficult to thread. Plain sailing upwards on this troubled sea was soon, however, destined to end.

At the time of roping, Burgener and Venetz were attached to Watson, whilst Proment and I contented ourselves on another coil. We had not been trussed more than twenty minutes—I was standing upon a narrow ledge of hard ice, of about a foot in width, and forming the boundary line between two steep slopes of the glacier—when Proment slipped suddenly and unaccountably right out of his steps. His heels flew well from under him, and, with ice-axe in hand and the usual mountaineering *impedimenta* at his back (including a wine tin), like some ill-fated hero in the Iliad,

δούπησεν δὲ πεσὼν, ἀράβησε δὲ τεύχε' ἐπ' αὐτῷ.

Fifteen feet of good cord were firmly between us; and, when it became taut in a few seconds, as he 'slithered' hopelessly down the slope towards a great crevasse which heeled over some distance beneath, I fortunately was able to bring him to an anchorage, and both of us were thus relieved from a singularly uncomfortable and anxious predicament. I took care that we were all five roped together during the remainder of the day. With the Mischabel Joch and Alphubel well to our left front, the rocks of the Täschhorn were reached in 6¼ hrs. from the Gletscher Alp.

After a brief halt, we took immediately to a buttress, or rib, of rock upon the face of the mountain before us, directly under the highest point. A snow couloir ran down at no great distance on our right. From this point to the summit the gradient was very steep. The rocks at first, although shaly, were upon the whole good; but, as we advanced to about half-distance, they became much broken and slightly risky. Altering our course now a little to the right, we crossed over to another rib—snow-covered at the time—and planted ourselves, without further incident, upon a depression about 90 ft. north of the

highest point, having climbed all the way straight up the face from the Fée Glacier. The top was gained a few minutes later, at a little before 11 o'clock. The Täschrhorn has two well-marked points on the summit-ridge; the one we ascended, towards the south, having slightly the advantage of its northern rival. We found Mr. Gardiner's card (or rather paper) in the accustomed bottle.

It is difficult to credit that this peak is nearly 200 ft. lower than the neighbouring Dom. Having ascended both, I confess that, to my unaided eye, the difference between them—thus ascribed—seems more imaginary than real. At one time the Täschrhorn was given the advantage in hypsometrical reckoning; it is so computed in the Appendix to the Introductory number of 'Peaks, Passes, and Glaciers,' although the 'query' after the figures indicates that such an estimate was not intended necessarily for final adoption.

Between the eastern and western sides of the Täschrhorn there can be no comparison. The former is by far the finer of the two in every way—whether as regards the climbing or in respect of the views which each ascent affords.

Novelties are not essential to maintain mountain enthusiasm. The Alpine Club will flourish long after the last 'new expedition' shall have been chronicled in the Journal; at the same time, it does not follow that an appetite must needs be jaded because it seeks after an occasional stimulant. I do not refer to the stimulant afforded by unwarrantable risk, but to that supplied in the discovery of new routes and means of ascent.

Whenever the Aiguille du Géant and the Aiguille du Charnoz shall have followed the excellent example lately set them by their near neighbour the Aiguille du Dru, and have owned their masters, the only 'new expeditions' left us—in the best known Alpine districts—will be those which old friends with new faces afford.

The Dom and the Täschrhorn have shown, of late, more new lines of successful attack than a few years ago were deemed possible upon them, and I, for one, am by no means prepared to admit that 'new sides' are principally 'wrong sides.' In some cases, of course, all sides of a mountain but one have been left untried, because it has been evident, from the first, that it were absolute foolhardiness to attempt a second; but, in many another instance, experience gained of late has suggested a survey and eventually an attack upon slopes which have been found, notwithstanding all previous forebodings and forewarnings to the contrary, quite possible to cope with, without

any risk which can be called unjustifiable, but which have not until late years even been 'looked at' except to be pronounced 'impossible.'

The descent of the Täschhorn to the Fée Glacier would, I think, be practicable when the mountain is in really good condition and free from much coating of snow; but Mr. James Jackson was well advised when, having reached the summit a few days after us, he declined to retrace our route, notwithstanding that his guide was Christian Almer. The descent of the rocks on the eastern face in such weather as he describes in the Journal, it would be nothing short of lunacy to attempt. I fully agree with Mr. George, that the mountain from the Saas side would be altogether impracticable except under very favourable circumstances—when the rocks are, for the most part, free from snow.

In descending to the Kien Glacier, we quitted the rock arête from the summit at a very awkward point, too low down, and considerable care alone prevented a bad slip before reaching the upper snow-fields. A long grind through soft and even yielding névé brought us at length to our goal, down the tedious Wildbach. Eight o'clock saw us comfortably at dinner in the excellent little hotel 'du Weisshorn,' at Randa. Burgener, as prime mover of the expedition, was naturally as much pleased as any of us at so complete a success, and it is only due to him to add that he led splendidly to the summit without a single fault. Notwithstanding his more recent exploit on the Dru, the memory of the Täschhorn from the Fée Glacier (two years before) is not likely soon to be effaced. I hope to see the day when Saas and Fée shall be provided with good hotel accommodation, for I am convinced that when this *desideratum* is supplied, there will not be a more popular Alpine centre than that to which I have here endeavoured to draw the attention of mountaineers.

NOTE ON THE SARACENS AT SAAS AND ELSEWHERE
IN THE ALPS. BY THE EDITOR.

My attention has lately been drawn to the statements as to the presence of Saracens or Moors at Saas in the tenth century, made in works commonly in the hands of English readers, such as Isaac Taylor's 'Words and Places,' Murray's 'Swiss Handbook,' and Stanley's 'Sinai and Palestine,' which are repeated by Mr. Wethered above. These statements appear for the most part immediately derived from Engelhardt's 'Monte Rosa und Matterhorn Gebirg,' published in 1842. But it is somewhat singular that English transcribers, while copying and adopting Engelhardt's conclusion as to the presence of Saracens at

Saas, and the (as they seem to me) somewhat questionable etymologies on which he supports it, have paid little attention to the interesting facts which he obtained from Reinaud's 'Invasion des Sarrasins,' as to the presence and misdeeds of these marauders in the Western Alps from the sea to the St. Bernard.

My object now is not by detailing and adding to these facts to follow out the story of the Moorish inroad as it may be gathered from the chronicles of the time. That interesting task I leave to Mr. W. A. B. Coolidge, who has gone deeply into the subject, and to whose rare knowledge of the early history of the Alpine regions I am indebted for many of the references on which the present note is founded. What I wish to do here is to give a point to the inquiry by stating the limits beyond which the presence of the Saracens ceases (so far as I can judge from the authorities before me) to be an indisputable fact, and becomes either a matter of conjecture or one for ascertainment by further inquiry.

In the singular hill district on the shores of the Gulf of Lyons—still known as the *Montagne des Maures*—which, completely cut off from the system of *Alpes Maritimes*, seems from its flora and climate to the man of science as well as to the traveller almost a part of Africa, the Moors found a congenial home. From their fortress on the Bay of St. Tropez the marauding bands pressed speedily through the Western Alps, bursting out now towards Burgundy, now towards Italy, sacking Embrun (A.D. 916), or burning the great monastery of Novalesse (A.D. 906).

In A.D. 940 they crossed the Great St. Bernard, and burnt St. Maurice, and from that time till 973, the year of the fall of their coast stronghold, Fraxinetum, held the pass or harassed pilgrims, capturing as their final booty (A.D. 972 or 973) no less a person than the Abbot of Cluny.

Thus far there is no room for dispute. The movements of the Saracens can be followed from year to year, as Mr. Coolidge will show in the next number.

But there seems to me need of further evidence before we can accept as certain the presence of the Saracens beyond the neighbourhood of the St. Bernard, whether at Saas or in the Graubünden, and it is to this side of the question that I want to direct the attention of competent inquirers.

The evidence in support of the Saracens having passed beyond the St. Bernard appears to be as follows:—

The notices of the ravages of 'Saracens' in Rhætia and Alamannia in or about A.D. 936, which were so serious that applications for help to restore the damage were made by the Bishop of Chur to the Emperor.

A treaty (A.D. 942) between Hugo of Provence and the Saracens of Fraxinetum that the latter 'in montibus qui Sueviam atque Italiam dividunt, starent,' with the purpose of obstructing the passage of his rival Berengar into Italy. 'Suevia,' I suppose, stands for High Germany, and thus the treaty would naturally refer to the eastern as opposed to the western or Burgundian passes, the Mont Cenis and the two St. Bernards.

The mention in the chroniclers of a defeat of a mixed host of Hungarians and 'Saracens' near Neuchâtel in 954 (said to be ill-authenticated), and of a Saracenic attack on the great monastery of St. Gall about the same time.

Lastly, the existence of names of Saracenic origin in the neighbourhood of some of the principal passes.

E.g. (in addition to those given by Mr. Wethered) Algaby and Gebelhorn on the Simplon, Castelmur and Muretto near the Septimer.

These arguments seem to me insufficient in the face of the following considerations:—

All historical writers are more or less puzzled to show how the Fraxinetum Moors got, without leaving the usual traces of their passage, to 'Alamannia' and St. Gall, and the last attempt, Herr Ehlmann's (in an article 'Die Alpeupässe in Mittelalter' in the 'Jahrbuch für Schweizerische Geschichte, 1878'), seems to me a complete failure. Is it probable that the Moors reached these distant regions four years before they had got to the St. Bernard; that they reached them without pillaging Sion or a single town on the S. slopes of the Alps? In 945 Berengar, it is true, crossed by Landeck and Trent, but so natural a route can hardly be pressed as an argument to prove that the eastern passes were actually occupied in accordance with the Convention. In 952 and 966 Otto himself crossed the Alps by way of the Septimer, and in 965 by the Bernardino without impediment. During all this time, while we have many notices of the sufferings from Saracens of pilgrims on the western passes, we have *not a single instance on record* as to the eastern.

In what way, then, can the explicit reference to Saracens at St. Gall and elsewhere be accounted for?

Both Von Müller, the Swiss historian, and Engelhardt assert, and Gibbon expressly confirms their statement, that in the dark ages the term 'Saracen' was very loosely used. Every marauder was a Saracen. Similarly we see in our time American tourists call every Asiatic an Arab, English press-writers call every Caucasian a Circassian, and some English officers call any coloured man 'a nigger.' Is it not a fair hypothesis that the so-called 'Saracens' of N. and W. Switzerland were Magyars or Khazars?

Herr Theobald, the well-known illustrator of his native Canton Graubünden, explicitly says in his work 'Das Bündner Oberland' that the marauders of 936-40 were Hungarians:—'Die Angabe, dass Karl der Grosse in Disentis gewesen sei und das Kloster noch weiter ausgebaut habe, ist eine Verwechslung oder eine blosser Sage. Dagegen that dies Kaiser Otto der Grosse (940) nachdem er die Ungarn auf dem Lechfelde besiegt, *denn diese waren damals bis in Rheinthal vorgedrungen und hatten Disentis nochmals ausgeplündert.* Er schenkte dem Kloster ansehnliche Liegenschaften und Privilegien. Der damalige Abt hiess Waldo.'

Lastly, as to Saas in particular. The *only* evidence as yet for the presence of Saracens in this case is the local nomenclature. The absence of any confirmation in local tradition is, to say the least, strange. Engelhardt—who, with the help of a friend, worked out for himself his pretty

derivations of Almagel (Al-Mahal, the station), and Mischabel ('the lioness with her cubs') and had a parent's pride in them and the theory they involved—had before him a MS. chronicle of Saas compiled in the beginning of the present century by a Rector of Saas from over 300 ancient documents, going back as far as A.D. 1200. *He quotes nothing from it in support of a Saracenic element in the population.* We find in Schiner's 'History of the Valais' (1792) a statement that Saas was colonised after the other valleys by the people of Visp, who at first only used it for pasturage, and this seems confirmed by the name 'Saas' itself, applied elsewhere to high pastures, and by the terms in which the valley was sold in 1301 by its then lord, a noble of Visp. Nowhere is there a word about Saracens. The Saas Passees, though mentioned as 'very old' in the fifteenth century, are not, so far as I know, referred to by any tenth-century chroniclers.

What is the nature of the etymological proof which is to counter-balance this negative testimony? Some of these ingenious suggestions will not stand. 'Balferin' is 'Balenfirn.' The old form of Almagell, Almen-gell, surely tells its own story. Nor can I think that the case has been strengthened by the Arabic Professor at Oxford, whom Mr. Wethered has called in. Professor Nicholl dismisses some of Engelhardt's suggestions as the 'fancies of an amateur philologist.' The derivations which he proposes to substitute, and Mr. Wethered adopts, are, doubtless, more grammatically deduced; but are they not even more far-fetched and improbable than Engelhardt's? Before a matter of this sort can be discussed or speculated on with any advantage, some consideration of its various elements seems necessary: and I confess I should not have supposed anyone would have been bold enough to propose an Arabic source for such names as Distel or Alp-Hubel in a German-speaking district. Do not all these names, curious as they undoubtedly are, admit of explanation without any need of calling in Saracens? Consider the natural conditions of the district. The Teutonic immigrants comprised in the seven 'Zehnten' of Wallis (if we use the Teutonic form we must warn readers not to fancy it has anything in common with 'Wales,' or is anything but the Roman and mediæval 'Vallesia') pressed down on an earlier Celtic race, whose descendants continued up to the end of the last century under a separate form of government ('Grand Majors' appointed by the Landsgemeinde of the county, which under a Hauptmann of its own sat at Sion and shared authority with the Count-Bishop) in the western districts. We should expect, therefore, to find a few Celtic or Romance names Teutonised and many pure German ones. We note near Zermatt a tarn called the 'Lei See' (Swiss Alpine Club map). We have the Plan de la Lei (near St. Maxime de Beaufort), the Allée Blanche, the Pigne de la Lée at Zinal, and the Aléfroide in Dauphiné, all derived from the word 'lex' or 'lei.' M. Durier says that 'lei' means an enclosed pasture, and hence a pasture naturally enclosed by precipices. In our own country we have 'ley' (as in Hoathley) for a pasture, and in Devonshire a friend tells me a clover field into which, after it has been cut, animals are turned in to feed is known as a cloverley, though the word does not survive in its simple form. Is it very

unreasonable to fancy Allalein a Teutonised form of 'A la Lei'? May not mountain names come from 'gabel' as well as 'gebel'? Is not 'fork' most appropriate to the Mischabel? One guess is surely as good as another; and perhaps better? And as to Monte Moro itself and similar names south of the chain; the ancient form of this name in the deed of sale of 1301, referred to above, is *Mundmar*, and the MS. corrects this to *Montmar* (Engelhardt). A *Mons Martis* would have been a natural rival to a *Mons Jovis*. Is any word which begins with *Mur*, *Mor*, or *Mar* to be taken as a proof of the Moors' presence? Castel *Mur* ('Ad Murum') in Bregaglia comes from the Roman wall still existing there, and I suspect many of the 'murs' have to do with the walls which we are especially told by the chroniclers were erected on the passes for purposes of toll-exaction. The difficulty which will press on those who attach weight to *Mur*, *Mor*, and *Mar* as a sign of the Saracens will be not their rareness, but their frequency. They turn up all over the Alps. There are a *Pian del Moro* and *Passo di Muretto* in the hills above *Premia* (Val Antigorio).* At the foot of the Gries is *Morast*. Perhaps this is significant. Is it possible that some of the 'Mors' have to do with the root which lurks in moor, morass, marsh, signifying, I believe, a wet, uncultivated piece of ground? Moreover, the derivation of *Pontresina* from *Pons Saracenorum* is a most doubtful one. The late *Mons. Z. Pallioppi* of *Celerina*, a local antiquarian of the highest reputation, expressly scouted, I am informed, any such origin of the name.

I do not wish to embark seriously on any rival theories. But I may point out how easy it would be with the aid of a Turkish vocabulary to set up an argument for the Turanian origin of the population of Val d'Hérens. The dangerous glacier pass at the head of the valley is the *Col d'Olen* (*Olen* appears to mean death in Turkish). We have the *Glacier des Ignez* (*Ignez*=*Aiguille*). *Zmeiden* must surely be 'Meidan'? We have 'gouille' (*gol*) for lake. Then one might adduce the customs of the inhabitants—their practice of going on horseback whenever possible, of wearing bright colours, changing habitations—a relic of nomad life—their funeral feasts—their old houses with tent-like roofs, and so on. I need hardly say this is only an example of what etymology will, in ignorant hands, lend itself to.

In conclusion I beg most emphatically to warn all etymologists against trusting for Alpine nomenclature to Ordnance maps without supplementary local confirmation. Engineers frequently distort words in the most misleading manner, particularly in mountain districts, where they take them down from peasants speaking a rough patois.

I do not presume positively to deny that Saracens settled at Saas,

* Shown in the Swiss Alpine Club and Piedmontese maps, but not in the Swiss Ordnance map. The hamlet near 'Muretto' is *Agaro*. Doubtless from 'Agareni,' a mediæval name for the Saracens as descendants of Ishmael's mother! The inhabitants, it is true, are generally said to be Germans. See also on 'Moro' and other names in the *Saasthal*, an article, interesting though probably not free from errors, by *Mons. Gatschet*, in the Swiss Alpine Club 'Jahrbuch' for 1867-8. The author entirely disbelieves in Arabic derivations in the *Saasthal*.

or that they occupied for a time the Rhetian passes. Both suppositions are far from impossible, or even improbable; but in both cases further investigation and fresh evidence seem to me called for before we can accept their presence as indisputable. If any Moorish colony did reach the Saasthal, it will, I believe, be found to have got to it from the S. and not from the St. Bernard. But I shall not be surprised if the Saracens of Saas, like the Saracens in Cornwall, turn out to be a 'verbal myth,' even though the presence of Saracens on the eastern passes should be proved by sound historical evidence.

THE SCHRECKHORN IN WINTER. By W. A. B. COOLIDGE.

ONE fine morning in January 1874, as our party was descending the Grindelwald Eismeer, having successfully ascended the Jungfrau on the day before, the Schreckhorn towered up so magnificently in the bright sunshine that we stopped frequently to admire it. On that occasion Almer, carried away by our previous successes on the Wetterhorn and Jungfrau in winter, suggested that we might possibly bag the Schreckhorn also. But though this proposal was most tempting, we were overdue in England, and had to start for home immediately on our return to Grindelwald. However, I always bore Almer's suggestion in mind. On our next visit to the Alps in winter, in January 1876, we devoted ourselves to Mont Blanc; but fate, in the shape of the weather, was against us, and though we went up to the Grands Mulets *three* times and spent *five nights* there (January 1, 7, 8, 11, 12), we were only able to make one attempt on Mont Blanc itself, on January 12, which was defeated by a violent and sudden storm when we had reached the Grand Plateau, as it was obviously worse than foolhardy to try to advance further at such an unusual season.

Various reasons prevented me for some years from visiting the Alps in winter. When parting with Almer last September I charged him to let me know how the weather was about Christmas time. He wrote in the beginning of January to say that the snow was in admirable condition, and that if I wished to do anything I ought to come out at once. This was too much for me; so, despite the warnings of some of my friends, who thought there was no need to go to the mountains to see snow and ice this winter of all others, I left England alone on the evening of January 9, and, spending twelve hours in Paris, reached Berne next day, January 11; by a long detour through Alsace and by Basel, both the Geneva and Neufchâtel routes being entirely blocked up by

snow. I continued my journey without stopping, gaining glorious views of my old Oberland friends, to Interlaken, where I found Almer (to whom I had telegraphed to announce my arrival) waiting for me with a sleigh. The drive up to Grindelwald that evening, though cold, was most delightful, the stars overhead, the great peaks towering up ghostlike in the darkness, the dancing lights from all the little houses scattered over the snow-covered hillside, the swift, noiseless motion of our conveyance, and the jingling of the horses' bells, leaving an impression never to be forgotten. Still, after my twenty-four hours' journey, I was not sorry to reach the 'Adler,' where a most cordial welcome awaited me.

Next day, Sunday, was bright and sunshiny, and was devoted to strolling about, talking to Almer, and revelling in the clear Alpine air, which I felt as if I had not breathed for ages, though in reality it was barely three months since I had turned my back on Switzerland. Almer, of course, knew my object in coming, viz. to attempt the ascent of the Schreckhorn, over which I had pondered during the past five years. But it was, of course, necessary to get into some sort of training before trying such a formidable peak. Our first excursion (on Monday) was up the Furggenhorn (2,383 mètres), the most easterly spur of the Röthihorn, just north of the village. I enjoyed the walk very much, and the views were very grand, but I was naturally rather tired after it. We mounted by the little Alpenrose hotel on the way to the Faulhorn. On Tuesday we went up to the inn on the Männlichen, which, very curiously, neither Almer, nor his son Christian, nor myself had ever visited. The ascent from Grindelwald is very gradual, and was very fatiguing in the soft deep snow. But we were amply rewarded for our pains by one of the grandest views imaginable. There was a mist over the Thunersee, otherwise the horizon was cloudless. On one side we had the valley of Grindelwald, backed by the Titlis and Wetterhorn. The Schreckhorn, Eiger, Mönch, and Jungfrau were each more majestic than the other; while on the other side Lauterbrunnen seemed to be at our feet, and beyond Mürren and the Schilthorn, the Gspaltenhorn, and the Blümlis Alp met our gaze. There is a little knoll to N. of the inn, the Männlichen proper (2,345 mètres); but we did not go there, although there must be a fine view down into the two valleys of the Lütschine, near their junction, as we had had enough of the deep snow. This spot seems to be very little known as yet. In my opinion, the view is finer than the far-famed one from the Wengern Alp, whence it is easily reached by a tolerable

path. The Männlichen inn itself is connected with Grindelwald by a good bridle path, and there is a steep footpath to the village of Wengen. I strongly advise all who have not been to include it in their next journey; as for myself, I can only say that I regret having so long neglected to visit this lovely spot. The thermometer in the midday sun near the inn marked $+ 21\frac{1}{2}^{\circ}$ Réaumur (= c. $80\frac{1}{2}^{\circ}$ Fahrenheit).

Next day was dull, the Föhn wind having begun to blow, and producing the curious blurred effect on the high peaks so well described in an article in the 'Saturday Review' of February 22, which I think I am not mistaken in attributing to Mr. Leslie Stephen.

I will not weary my readers with details of all our excursions. We went up to the Eismeer twice to see how the snow was, but it was still very soft and powdery, there having been a heavy fall between the writing of Almer's letter and my arrival. On one occasion we were caught in a small avalanche on the Bänisegg, from which we luckily escaped with the loss of an ice-axe and a pair of spectacles. Another day we went up the highest point in the ridge between the Faulhorn and the Schwarzhorn, called by Almer the Grosseneggspitze, not very far, I think, from the 'Mittaghorn' of the Federal map. The Föhn wind alternated with snowstorms, so that the ascent of any great peak began to seem very problematical. A glorious day's walk to the Kuhmattenhubel, the little knoll just to N. of the Grosse Scheidegg, led us to undertake on January 21 the ascent of the Schwarzhorn (2,930 mètres = 9,613 feet), which we accomplished most successfully ($5\frac{1}{2}$ hours up, 2.25 down), though there was a bitter wind at the top, and the view rather cloudy. The ascent was made by the Grindel Alp and the ridge of the Gemsberg, the snow in parts being very soft and deep. That evening I had the pleasure of meeting Mr. Leslie Stephen and his nephew and M. Loppé. The two former repeated the ascent of the Schwarzhorn next day, and the day after the whole party crossed the Grosse Scheidegg to Meiringen, being probably the last travellers who saw that village before the disastrous fire.

We arranged to start to sleep out for the Schreckhorn on the 22nd, but the Föhn was too much for us. My time was drawing short, as I was obliged to be in England on the night of the 31st, and wished, if possible, to spend a day at Basel on my way back. On the 23rd, another dull day, we had the adventure on the Bänisegg, of which I have before spoken; and on the 24th in despair we crossed the Wengern Alp in

thick mist and a snowstorm, finding a tremendous thaw going on at Lauterbrunnen, which brought the Staubbach to life again, as, from the Männlichen, all traces of it had so completely disappeared that even Almer could not point out its exact position.

Next morning we held a grand consultation. The question was whether we should go up to Mürren for the Schilt-horn or return to Grindelwald in hopes of at last accomplishing the principal object of my journey. A sudden glimpse of the blue sky radiant with sunshine made us adopt the latter course, most fortunately as it turned out. For next day, the 26th, we were able to start for our sleeping quarters on the Schreckhorn. The party consisted of myself, Almer, his sons Ulrich and Christian, and a second porter, Friedrich Deutschmann, who had been with us on the Jungfrau in 1874. It was of course necessary to take provisions for three days, and abundance of wood and covering. We followed our old tracks up the Eismeer, not by the usual way to the Bärenegg hut, which is much exposed to avalanches, but along the base of the Mittellegi, then through the icefall of the lower glacier, and up the middle of this last to the Eismeer, a perfectly safe course, which Almer had taken at Christmas time with two English gentlemen on the way to the Zäsenberg. Having passed the ridge of the Bänisegg and searched in vain for traces of the missing articles, we took to the right bank of the glacier up a well-known gully, which was now in a very bad state, the earth being frozen as hard as iron and covered with fresh snow inclined at a high angle—altogether one of the nastiest bits of the entire expedition. It was dark when we reached the new Swiss Alpine Club hut, known as the Schwarzenegg Hütte, some way east of the old Kastenstein cave. It was half filled with snow, which was speedily cleared out; but there was plenty of straw, and we managed to pass a tolerably comfortable night.

Early next morning, our last doubts as to the weather were removed. It was decided to take Deutschmann to the top with us, as we had not sufficient wood to allow him to keep up a fire in the day time, and it was more prudent to have a man to relieve the leaders in case of need. We started on January 27 at 6.40 A.M., just at dawn. The snow proved to be in admirable condition, a trifle too hard if anything. We ascended the couloir near the Kastenstein glacier with unexpected ease, then mounted the glacier itself, and, halting for twenty-five minutes for breakfast (during which we were surprised by a piercing wind, which died away directly after), reached the 'bergschrund' at the base of the great wall of the

Schreckhorn at 9.35 A.M. All were in high spirits, and the weather left nothing to be desired.

On my previous ascent on July 24, 1872, owing to a succession of thunderstorms during the night the snow had been in a very 'avalanchy' state, and we had been obliged to climb up to the Sattel, along the crest of one of the rocky ribs which seam the wall, with the snow hissing down the couloirs on either side. Now, having crossed the bergschrund, we cut up to the rocks on the right hand, and climbed up them for forty-five minutes, meeting on the way with two slight mishaps—the loss of my field glass, my companion in the Alps during seven summers, which escaped from the fingers of one of the party and was immediately dashed into a thousand pieces; and of Almer's hat, which was later recovered. The rocks were very slippery, and it was determined that the best and shortest route was to cut up the great wall or central couloir. This we accordingly did; but the snow was extremely hard, and much labour was required to make good steps, which we expected would aid us on our descent; besides, as the sun mounted higher in the heavens, small stones rattled down from above, being released from their icy bed, and greatly annoyed us, both Almer and myself being struck, though no harm was done. Most singularly we found near the Sattel distinct traces of the last party up the Schreckhorn on October 5. The footprints had been frozen hard, and filled with snow like a mould, which had again been blown away by our enemy the Föhn.

We reached the Sattel at 1.35 P.M. only, much later than we had originally hoped, having been four hours (including a ten minutes' halt) from the bergschrund. Here of course a glorious view to the East burst upon us; but we were so intent on the summit that, after a stoppage of 25 minutes for dinner, we abandoned the greater part of our provisions and started at 2 P.M. for the top. We got on pretty well as far as the 'Elliotswang' and even farther, the rocks offering good hold, and there being little snow on them. Things grew, however, worse and worse; and when we gained the first top or S.E. end of the final Kamm, I confess I feared that our expedition would be a failure. The ridge stretches very nearly at a level to a rocky knob, then after a depression rises to the true summit. In its ordinary state it is not difficult, but matters were very different now. A delicate crest of fresh snow, in some places perhaps two feet high, lay along the rocky ridge in its entire length. To pass along it, it was necessary to sweep the snow away, so as to get at the rock beneath. This was extremely laborious, and even then the

rocks were very wet and slippery. We had a snow shovel with us, brought up to make steps in the soft snow (for which it had not been brought into requisition), and with this, until it snapped short at a critical moment, and a solitary ice-axe (the others having been left at the base of the last rocks), we ploughed our way along. Almer, who had led during far the greater part of the ascent, worked with indomitable courage; but after passing the middle knob there was a very nasty bit, and even his strength failed. Deutschmann, who was just behind him, was fortunately comparatively fresh, and was able to take his place. The 'mauvais pas' was overcome, and at 4.35 P.M. our little party of five stood on the highest pinnacle of the Gross Schreckhorn (13,394 ft.). We had been a little over 2½ hours from the Sattel. It is scarcely necessary to say that, late on a January afternoon, none of us wished to spend a long time on our airy perch. There were a few clouds on the horizon, and the sun was beginning to set. Having lost my glass, I could hardly take in the view; but I caught a glimpse of the Vierwaldstättersee glittering in the sun, and was able to admire the grand masses of the Finsteraarhorn and Wetterhorn, lighted up by the rays of the setting sun. We had the key of the case of the 'Thermométrographe' placed by the Swiss Alpine Club on the summit; but time did not allow us to open it. My own thermometer gave a reading of + 2 Réaumur (= 36½° Fahrenheit); but I am convinced that it must have been affected by some snow in my pocket, as the temperature on the summit was really deliciously warm, and I think the actual reading did not represent the true state of the case. I left my card in a bottle on the summit, and took that of Herr Loschge of Nürnberg, as a proof of the reality of our ascent, and, having finished a bottle of champagne, we turned to descend at 4.45 P.M.

It was evident that, if we were not to spend the night out on the rocks, we must use all diligence in getting down. We raced down to the Sattel in 35 minutes, stopped 5 minutes to pick up our things, and then resumed our headlong course. Our steps were frozen hard, and so well made that I ceased to regret the apparent loss of time employed in hewing them on the way up. As twilight came on, my eyes as usual gave way, and it was just as darkness was becoming total that we crossed the bergschrund at 6.55 P.M. Fortunately the moon rose, and, by the aid of her rays and the bright starlight, we managed to get on pretty well, especially as all real difficulties were over. We stopped 10 minutes to recover Almer's hat, and 15 minutes lower down to consume some provisions we

had left on the way up. The couloir was in a capital state, and we ran down it, singing and shouting in honour of our success, and regained our hut at 8.20 P.M. The ascent had taken us 8.55 actual walking, and the descent 3.5—total 12 hours walking. It was not long before we retired to rest, pretty well worn out with the fatigues of the day.

Next day the Föhn was again in the ascendant; we congratulated ourselves on having hit on *the one* day, during my stay in the Alps, on which an ascent was possible. Not wishing to *descend* the gully of which I have spoken, we crossed above the upper icefall to the left bank, and descended by the 'Enge' (which was in a very ticklish state) to the Zäsenberg hut, regaining Grindelwald early in the afternoon by our previous route. A violent thaw had been going on there, and near the village I gathered several flowers and ferns, quite clear of snow.

Our success caused the greater astonishment, in that we had not revealed our intention before starting save to one or two persons; and I think I may fairly say, without boasting, that the Schreckhorn is the most difficult peak which has as yet been conquered in mid-winter—a triumph which I certainly owe to Almer's unequalled skill and thoughtfulness. I left Grindelwald early on the 29th, spent the greater part of the 30th at Basel, and reached England late in the evening of the 31st in time to keep my appointment next morning; and on February 4 I received the congratulations of my Alpine friends at the Club meeting that evening, eight days precisely after my victory.

MOUNTAINEERING IN DAUPHINÉ WITHOUT GUIDES. By F. GARDINER. Read before the Alpine Club, April 1, 1879.

IN a note written in 1870 by Mr. Leslie Stephen, then Editor of the 'Alpine Journal,' as an appendix to Mr. Grove's admirable paper on the 'Comparative Skill of Travellers and Guides,'* it is stated as an axiom, agreed to without a single dissentient, at a meeting of the Club, that 'mountaineering without guides' is a proceeding 'totally unjustifiable and calculated to produce the most lamentable results,' or, as Mr. Grove himself put it, infinite tribulation, to the Alpine Club. Now, in the face of such statements, I and my companions, Messrs. Charles and Lawrence Pilkington, almost feel in the position of 'prisoners at the bar' charged with heresy;

* 'Alpine Journal,' vol. v. p. 96.

and it will be for competent Alpine judges, when they hear our defence, either to condemn us for misdemeanour or commend us for adventure.* For the opinion of the outside public 'we are not careful in this matter,' provided our peers absolve us from all charge of rashness. The absurd controversies evoked by the appearance in the public prints of the ascent of the Matterhorn without guides caused us to avoid the doubtful honour of sharing the columns of the British press with letters on the giant gooseberry, Alpine selfishness, and the sanitary condition of Pontresina, and to reserve our expeditions for a tribunal capable of judging the case.

In order to undertake such expeditions as those which we have successfully accomplished, a primary necessity in the formation of a party is a thorough feeling of confidence in each other, and an equality of physical powers; for, were either of these qualifications wanting, the capacity of the one might not suffice for the incapacity of the other. That no amateur can ever hope to equal a thoroughly good guide must be freely admitted by everyone; but I certainly think that capable amateurs, who have served a long and steady apprenticeship under first-class guides, may, under favourable circumstances, dispense with professional aid.

* Defendants, even bishops, who conduct their own defence, generally fail; and Mr. Gardiner has hardly made the best for himself, I think, of the judgment of the high court in the case of *Grove v. Girdlestone*, as delivered by my predecessor in office. When that judgment is read carefully and as a whole, it will be seen that it is easy for us to acquit Mr. Gardiner and his friends without any reversal of previous decisions. The Club at that time refused to lay down any 'rigid principles' or 'formal code' as to the use of guides: holding that 'the skill of the travellers, the difficulty of the mountain, the state of the weather, and various other conditions,' must be taken into account in each case. The only sentence that presses at all upon Mr. Gardiner is the one he has selected for quotation, where the words he gives, taken by themselves, might possibly imply that on *difficult* expeditions *no party* could be justified in going without guides. The passage might have gained in clearness had the refusal to lay down any rule which should not be subject to exceptions been expressed in this also as well as in preceding and following sentences; but the fact that the general rule as to taking guides was not intended to be absolute, but dependent on the skill of the climbers, is shown even in that sentence by the introduction of qualifying words. I am confident that not only for the public, but for the mass of the Alpine Club, the general rule will always hold good. But I hope that there may often be exceptions to prove the rule, and for whose sake we may decline (as we wisely declined in 1870) to make it 'rigid.'—Ed.

Mr. Cust, in his paper on the 'Matterhorn without Guides,' has once and for ever dealt with the question of example with regard to that illustrious trio Messrs. Jones, Brown, and Robinson, and I thoroughly endorse his view of the matter.

For many past years the Pilkingtons and I have been in the habit of wandering among the hills of Cumberland and Westmoreland at all periods of the year, but more especially in the winter season. This, I feel convinced, largely aided our mountaineering experience, not merely in giving us confidence in ourselves, but also considerable knowledge of rockwork. Of course, even without our English training, I think that the experience we had gained under good guides would have sufficed for our success, but we certainly should not have had such confidence in each other's path-finding powers. As regards the pleasure of being without guides, only those who have conquered a difficult peak without professional assistance can understand the supreme satisfaction of work accomplished in that manner; it seems to us mountaineering 'pur et simple,' and brings into play the entire capabilities of a man for such work.

The weakest point in Mr. Girdlestone's practice seemed to be the difficulty of obtaining trustworthy companions. Two persons only on a rope are not sufficient, in my opinion, to ensure safety on difficult glacier expeditions; and if one of those two is inexperienced and nervous, the conditions of a catastrophe seem thoroughly fulfilled.

Mr. Cust, in his paper on 'Climbing without Guides,' says that 'nothing can be accomplished by amateurs, except what for parties, as usually constituted, is quite commonplace;' also, that '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.' Now, I venture to differ with Mr. Cust on these two points, and leave it to such eminent mountaineers as Messrs. Coolidge and Pendlebury, who are well acquainted with the district, to say whether the list of our expeditions is such as to come under the head of commonplace even with guides; and whether that question is decided in our favour or not, the second quotation from Mr. Cust's paper may be answered by stating, that within four weeks, viz. from Sunday, July 7, to Saturday, August 3, we accomplished fifteen glacier expeditions, and traversed a considerable amount of country between Turin and Grenoble.

The remainder of Mr. Cust's paper we fully coincide with, and heartily endorse such sentiments as the following:—'The

need of self-reliance, the trust in friends, the very alternation 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.' We hope that, had prudence commended our turning back from any expedition, we should have found the moral courage to do so; in fact, that was one of the 'articles of partnership' agreed upon before we left England, but fair skies and good fortune obviated that strain upon our sense of duty.

Implicit confidence in the compass and the power of reading a map are very great points of advantage which some amateurs have over the large majority of guides. On two occasions these advantages saved us from defeat, when, had we been professionally attended, and trusted merely to the powers of our attendants, we should probably have beaten a retreat.

Among the disadvantages of being guideless, the necessity of carrying stands out in glaring pre-eminence, although we reduced our provisions and extra clothing to the smallest possible quantity; but such work as step-cutting we found much less difficult than we had anticipated, when equally divided among the party; and even on the Ecrins, Col des Sellettes, and Pic Jocelme, where we had some serious ice-work to overcome, and several hours step-cutting, we found the work well within our power.

Apart from the fact of Dauphiné containing most of the last few mountaineering crumbs in the Alps (and even there they are now pretty well picked up), its delightful immunity from the British tourist and penny-a-liner enabled us to pursue our plans in peace, without any fear that sensational paragraphs in the newspapers would seriously alarm friends at home, as happened in the case of two of our party two years ago after a somewhat chilly ascent of Mont Blanc.

Another advantage we had—that we escaped the badinage of professionals. I can fancy few things more miserable than returning unsuccessful from a guideless expedition to a great mountaineering centre such as Zermatt, and having to 'run the gauntlet' of sarcastic questions and feigned commiseration.

We approached Dauphiné from the S.E., and commenced our mountaineering campaign by an ascent of Monte Viso from the Val di Po, *viâ* the Passo delle Sagnette. It was a long expedition—too long for a first day, although we had spent the previous night at the Alpetto châteaux, about four hours above Crissolo, and had sent nearly all our baggage from Crissolo over the Passo di San Chiaffredo to Ponte Chianale in the Val Varaita by a porter. On the whole we found the

Viso more difficult and much longer than we had expected. We left the Alpetto châlets at 2.50 A.M., and did not reach the Chardonney Alp, in the Val Vallante, until 8.20 P.M.

It was rather unfortunate that on Monte Viso, of all our expeditions, we should have been overtaken by a dense mist about two hours below the summit, which continued during the remainder of the day. In the first place, we lost what must be a superb view; and, in the second place, to men upon their first expedition, it augmented the ordinary difficulties very considerably. Our experience gained in dealing with mist on the Cumberland hills served us well; and although our line of descent was purposely quite different from that taken in ascending, we hit the exact spot where we had left our knapsacks in the morning. I fancy that both in ascending and descending the Viso we did not manage to hit the route ordinarily taken, for we had always understood that it was an easy mountain; and, without saying that it was difficult, I do not think it could come under the head of easy expeditions. Certainly it is not the right sort of peak for the beginning of a tour.*

The day following our ascent of the Viso we proceeded to La Chianale, in the Val Varaita, where our appearance created immense curiosity among the quaintly dressed inhabitants, and from it crossed the Col Agnello. Descending the Val de l'Agnelle, we reached the village of Ville Vieille, in the valley of the Guil, the same evening, passing *en route* the wonderful earth pillar described and sketched by Mr. Whympier. We put up at an inn dedicated to the elephant, where we were entertained with tough mutton and a bill that would have done credit to the rapacity of a Parisian hotel-keeper.

The drive from Ville Vieille, where the road commences, down to Guilestre, was very fine; but from Guilestre to La Bessée, in the valley of the Durance, the scenery resembles the Rhone valley in its worst aspects. From La Bessée to Ville Vallouise the drive becomes gradually more interesting, until the village itself is reached. There we were received with effusion by my old friend M. Jules Gauthier, landlord of the Hôtel de Mont Pelvoux, who handed over to us a precious case

* Not to discourage moderate climbers unduly, I must add here that Monte Viso is now frequently ascended by Italians with local guides. F. Devouassoud and Mr. C. C. Tucker, both utter strangers to the mountain, reached the top in $3\frac{1}{2}$ hrs. from the Passo delle Sagnette without roping, and returned to Crissolo in $5\frac{1}{2}$ hrs. They were followed on the same day by an Italian party, including a lady. This was in September, when the mountain is doubtless easiest; and there was no mist.—EDITOR.

of preserved meats and soups, which we had sent from Liverpool, and which, owing to the great kindness of Messrs. Jullien and Bourron, the hon. sec. and treasurer of the 'Société des Touristes du Dauphiné,' had safely reached its destination.

As we were without guides, we determined to engage a couple of porters who could carry provisions, &c., to our sleeping-places, cook our food, and return to head-quarters for relays of provisions while we were mountaineering, and by the aid of M. Gauthier we secured the services of two excellent men for our purpose.

One of our porters was Simon Barneod, the shoemaker of the village, as ugly a fellow as could be met with in a day's journey, with a bull neck, a mouth from ear to ear, eyes like a Chinaman's, and hair of an electrified appearance and coarse as a pig's bristles; but he turned out to be rather a wag, and occasionally afforded us no small amusement. He was strong and willing, and frequently carried immense loads most cheerfully. Of our other man, Joseph Lagier, of Villard de Vallouise, we cannot speak too highly. He had during the greater part of his life been a soldier and an officer's servant, and was invaluable to us during our tour, as he could turn his hand to almost anything. But neither of these men had any knowledge whatever of mountaineering, and they only on one occasion made a glacier expedition with us.

It is not convenient to make glacier expeditions direct from Ville Vallouise, as that village is too far away from the base of operations and rather low down; but the Club Alpin Français has erected a very good hut on the Pré de Madame Carle, about four hours distant, near the Glacier Blanc and Glacier Noir. It is fitted up with unusual comfort, and is known as the Refuge Cezanne, so named after the late president of the French Alpine Club. About 1,500 ft. higher up, the rock, known as the Hôtel Tuckett, has been boarded in and supplied with rugs, sheep-skins, cooking utensils, &c.; and on Mont Pelvoux there are now two huts, viz. the 'Refuge Puiseux,' which, during the summer, is occupied by a shepherd of Provence; and a good deal higher up another, known as the 'Refuge des Bergers de Provence,' a most convenient and beautifully situated *gîte*. Altogether we passed a week in the above-named huts, and found them a great convenience, and by obtaining constant relays of provisions from Ville Vallouise we kept the shoemaker pretty well employed, while, with our ample supply of American beef and soup, and such a splendid *chef* and general servant as the warrior, we were as comfortable as if we had been at an inn. But then, we had absolutely *first*

use of all these huts, as they were only erected in 1877, and had not been practically used, except the Refuge Cezanne, and that only for the inevitable fête without which no French undertaking would be complete, when it was opened with a religious ceremony and a grand flourish of trumpets.

I do not propose in this paper to give a detailed account of each expedition that we made, which would inevitably bore Alpine readers, but merely take them in rotation and point out the various incidents which occurred in relation to the conditions under which we were mountaineering.

We began our expeditions in Dauphiné with the first ascent of the Pic des Arcas, the highest point of the *massif* known as the Seguret Foran, which, from its position, commands what I have no hesitation in stating to be one of the finest views in Dauphiné. It has the advantage of being easy; and anyone who has not much time at his disposal, and wishes to get a general idea of the formidable nature of the great peaks of this district, cannot do better than make its ascent. From the summit the view was marvellous. Immediately opposite to us stood the formidable eastern face of the Pelvoux, above the Pré de Madame Carle; to the right of which the Ecrins, dominant over all, looked absolutely perpendicular; while to the right the central peak of the Meije, looking infinitely less practicable than the western and more difficult one, seemed to lean over towards the Vallon des Etançons, like a Tower of Pisa of Nature's own making. Towards the NE. the peaks of the Tarentaise and Graians, backed by the Pennines from Mont Blanc to Monte Rosa, could be distinctly made out—the Weisshorn and Dent Blanche especially; while to the E. the Viso stood in solitary state, and on the S. the torrent-swept valley of the Isère lay spread out, terminating in confused masses of undulating hill country.

Truth to tell, the appalling aspect of the great peaks in our neighbourhood had a certain sobering effect upon our ambitious ideas, and we endeavoured to console ourselves by thinking that 'what man hath done, man can still do.'

Our next two expeditions, viz. the ascents of the Pic des Opillous and the Pic Jocelme, deserve rather more than a passing notice, for the climbing in some places was more difficult than any mountain work we had accomplished with or without guides.

We took up our quarters at the hut of a shepherd, who received us most hospitably. This hut is about an hour higher up than the châteaux of Entraigues, in the Val du Sellar. In the ascent of the Opillous as far as the Col du Sellar we

met with no difficulty, though I can scarcely credit the statement of the intelligent native, reported by Mr. Whymper* to have said that cattle had been driven across; for on the east side they would have had to mount a steep crevassed glacier, and on the W. there is a steep drop down what looked like difficult rocks. Just before reaching the col we heard the report of firearms in the valley beneath, and upon our return in the afternoon found that our warrior had successfully stalked and killed a chamois.

From the Col du Sellar to the summit the last half of the route lay over loose steep ice-covered rocks, which cost us a hard struggle; and when we came under the tower forming the top, an almost upright slab of rock seemed to bar the way and defy our efforts. The foot and hand holds were few and far between, and insecure when reached, and were it not for a projecting knob of rock half-way up, over which we could get our arms, I scarcely think we should have reached the summit; and, having done so, we were not a little disappointed to find the cairn of M. Lionel Nigra, who made the first ascent of this peak in September 1877, with two Italian guides. We were under the impression, until we reached the summit, that the Opillous was a virgin peak. As nothing whatever was known of M. Nigra's expedition, either at Entraigues or Vallouise, we think it must have been taken from the Val Godemar, but in all probability by the same arête which to us seemed the only practicable one to the summit; for even were nature's obstacles overcome, we doubt whether anyone could live through the deadly cannonade of falling stones on the N. and S.

With regard to the Pic Jocelme, of which we made the first ascent next day, our difficulties were almost as great as those encountered on the Pic des Opillous. We reached a col between the Pic Jocelme and the Pic des Opillous, and looked down as wicked a gully as could be found anywhere. The face of the Pic Jocelme from this col looked quite impracticable, but about 500 yards to the right, and about 300 ft. below where we stood, we could see what looked like the end of a snow-covered glacier. Could we but get to that, we thought we might reach the summit; but between us and it lay 500 ft. of terribly smooth ice-covered rocks, over which we had to make our way downwards. It required all the skill at our command, because the foothold and handhold were so insecure that a faint head or heart, or a faltering foot or hand, would certainly have led to disaster; but our absolute trust in

* Whymper's 'Scrambles,' p. 224.

each other reduced the risk to a minimum, and without such a feeling animating a party an element of danger is constantly present. I cannot too strongly insist upon the necessity of such mutual confidence in the formation of any party that may wish to follow our example.

Our next expedition was the ascent of the Pelvoux. How strangely the condition of mountains differs from year to year! The ascent of the Pelvoux usually involves no very special difficulty; but last year, owing to the absence of snow on the small glacier flowing from the large snow-field at the west end of which the highest point lies, we had two hours' step-cutting in hard blue ice.

This might have been avoided had we followed Mr. Whymper's route by the rocks, which, although they looked fairly easy, would, according to what we had read and heard, occupy more time than even our step-cutting; and then we had the benefit of these steps in descending, which of course saved time on the whole expedition, as from the refuge and back again, including nearly two hours on the top, we only took 10½ hrs., viz. from 3 A.M. to 1.15 P.M.

It had been a moot-point with us whether or not we should try to ascend the Ecrins; but our unbroken success and the settled look of the weather caused us to decide, when we stood upon the summit of the Pelvoux, that if the attempt was to be made at all it should be made at once. Two days before we started for the Ecrins we met M. Rochat and the guides Gaspard père et fils. They had just come down from that peak, and reported it unusually difficult owing to the quantity of hard ice encountered in the ascent.

Having passed the night of July 18 in the Hôtel Tuckett, we started at 1 A.M. the following morning, with the light of a full moon and perfect weather to help us on our way. We followed the Glacier Blanc until we came under the ridge between the Ecrins and Roche Faurio, over which lies the Col des Ecrins, and, climbing over the lower slopes of the peak as directly as crevasses permitted, we reached the great bergschrund which seams the whole eastern face of the mountain at 6.15 A.M., and found ourselves almost directly under the highest point, but slightly to the E. I could just stretch myself across it at its narrowest part; and, planting two of the ice axes firmly into the upper lip of the schrund, the two Pilkingtons climbed over me and then pulled me up. From the bergschrund to the arête the real difficulty of the ascent lies. Over this we were admirably led by Charles Pilkington. Immediately in front lay a steep face of smooth ice surmounted

by terribly smooth but firm rocks, from which a slope of what seemed like snow from below led to the eastern arête. My barometer registered the height at the bergschrund at 12,500 ft., and at the summit 13,400 ft. ; so that, estimating the height from the point where we struck the arête to the summit at about 400 ft., it would give about 500 ft. for the difficult part.

The smooth rocks were our chief difficulty, and I should think they were about 150 ft. out of the 500. They were very difficult but firm, and the only risk we ran was from a slip ; but we took the most elaborate care, one man only moving at a time.

From the rocks to the arête, about 200 ft., what had looked like a snow-slope from below turned out to be only a thin coating of partially frozen snow over hard ice. To our astonishment we found that Gaspard had climbed by the aid of this snow, which appeared to us grossly imprudent. We determined to run no such risk ; and deep into the hard ice beneath we cut every step we took, as we had done in the ice-slope below the rocks, each man behind the leader improving and enlarging them as he passed upwards. We reached the arête at 8.10, just five minutes short of two hours from the time we crossed the bergschrund, and at 8.40 A.M. stood on the Pointe des Ecrins.

Although we do not so entirely agree with Mr. Ball's description of this peak as to say that 'it is probably the most difficult expedition hitherto undertaken' (see 'Western Alps,' p. 85), still the difficulties overcome were of such a high-class order, that I think we may be pardoned a certain feeling of exultation at our success. It is true Mr. Ball wrote thus of the Ecrins many years ago, but the same remark still remains in the last edition of the 'Western Alps.'

We remained 1 hr. and 10 min. on the summit, and, leaving at 9.50, returned to the bergschrund at 12.25 ; so we took 2 hrs. 25 min. for the ascent, and 2 hrs. 35 min. for the descent, almost two-thirds of the latter being occupied in descending the rocks, as we were determined to allow no feeling of impatience to run us into any danger. We returned to Refuge Tuckett at 3 P.M.

On the day following our ascent, Herr Moritz Déchy, of Buda-Pesth, now exploring the Himalayas, ascended the Ecrins, and was rather astonished to find a beef tin containing our cards with the significant addition 'without guides.' I am glad that he can bear witness to the authenticity of our ascent.*

* From the times given above, it will be seen that we took 14 hrs.,

If I have laid rather more stress upon our ascent of the Ecrins than upon any other of our expeditions, it is not because we found it the most difficult, but because it is a well-known peak and likely to be more interesting as an example of climbing without guides than if I had elaborated the ascents of the Pic des Opillous, or Pic Jocelme, or the passage of the Col des Sellettes, all of them containing some parts more difficult, in my opinion, than the Ecrins.

The highest point of the Crête de la Bérarde, known at La Bérarde as the Pic du Vallon, and since rechristened by the French Alpine Club Pic Coolidge, not having been hitherto ascended from the Glacier Noir, we undertook the expedition, in which we were successful. The first actual ascent of the mountain had been effected by Mr. Coolidge in 1877; but he took it from La Bérarde, and his line of attack was altogether from that side, and did not touch ours at any point. We found no very great difficulty throughout the expedition.

We then returned to Ville Vallouise to settle our account with M. Gauthier. A word *en passant* regarding this worthy. He is incomparably the most enlightened being in the whole district, and would, I feel sure, develop into an excellent host with reasonable encouragement. The arrangements of his house are as yet very primitive; but he gave us good food and clean beds, and had the wisdom of not attempting to 'slay the goose that lays the golden eggs.'

It was with real regret that we bade adieu to Vallouise and turned our faces to La Bérarde *viâ* the Col du Sélé, a pass well known to the earlier explorers of this group.

On this occasion only we had our two porters with us, in order that we might take all our belongings with us from Vallouise to La Bérarde. They were delighted, and placed the most amusing and implicit confidence in our powers: we actually stood to them in the position of guides.

All went well until we had crossed the col, when we had to descend some rather steep rocks and cross a bergschrund to the Pilatte Glacier, and from the rocks where we stood to the glacier below it was necessary to make a spring of from 10 to 12 ft. C. Pilkington, who was first, got over easily enough;

including all halts, for the expedition. We spent half an hour for breakfast, and 1 hr. 10 min. on the summit; so that, allowing the odd 20 min. for other stoppages, it took 12 hrs. actual work from the Refuge Tuckett and back again. Although we found the work on the arête leading to the summit fairly difficult, it did not tax our capabilities to such an extent as the slope of smooth rocks half way between the bergschrund and the arête.

then came the shoemaker, who managed to turn himself pretty well upside down in the process, arriving below in a heap, and giving L. Pilkington, who was behind him, a good hard tug with the rope. While this was going on the string of the shoemaker's knapsack broke, and it disgorged its contents on to the glacier below; first came a tin of beef, then the butter, then our slippers, then the bread, all of which, gaining impetus as they descended, took a few gigantic bounds, and, with the exception of our slippers, were lost for ever. I was the last man on the rope and had had a full view of the whole proceeding, and had maintained my gravity at no small cost to myself, until the poor shoemaker unbundled himself, when his woebegone aspect combined with our bounding provisions fairly conquered both the Pilkingtons and myself, and the cliffs around resounded with peals of laughter. It is an odd coincidence enough that on another pass (the Col de la Pilatte) on the same glacier so similar an incident should have occurred about fourteen years ago, as all readers of Mr. Whymper's book will doubtless remember.

La Bérarde has not changed in the least within the last five years—that is to say, externally. The same aspect of poverty still prevails, and I found old Rodier hoeing potatoes as of yore, and still suffering from his chronic state of hydrophobia; but I was not prepared for the radical changes effected in his house by the Société des Touristes du Dauphiné, who have rented the upper part of his dwelling from him and fitted it up decently, with six good iron beds, chairs, tables, knives, and crockery, and other generally accepted essentials of civilisation. I had sent a box of provisions from Liverpool to La Bérarde, as I had done to Vallouise; so that we were able to stand a ten days' siege with comfort, which it would be scarcely possible to do without some such arrangement; nor were we tormented by Rodier's rapacity as in old days, for he has been pretty well checkmated by a tariff arranged by the Société.

From La Bérarde we made the first ascent of the Aiguille du Soreiller, the highest point between the Plaret and the Aiguille du Plat; we estimated the height at about 11,400 ft. The clouds hung low on the mountain during the earlier part of the day, and we had to trust to map and compass to guide us to the glacier below the S.E. face of the mountain, which we saw for the first time when we got to the top of an old moraine at the base of the actual peak. We next proceeded to the châteaux of La Lavey in the Vallon de la Muande, and after waiting two days in bad weather crossed a new pass situated between the Cime du Vallon and the Col de la

Muande, leading direct to the village of La Chapelle, prettily situated in the Val Godemar, a more thriving community than any we had seen in the district.

Our new pass, which we named the Col de Chalance, has, I consider, the advantage of being the easiest and most direct way of reaching La Chapelle en Godemar from the commune of St. Christophe, having taken us less than 8 hrs. from La Lavey, including halts of fully $1\frac{1}{4}$ hr. for sketching purposes.

In the afternoon of the same day on which we had crossed the Col de Chalance, we started for the shepherd's hut in the Combe du Clot about four hours above La Chapelle. We were most hospitably received by the shepherd, and could with difficulty persuade him to receive any remuneration for his trouble on our account.

On several occasions we came in contact with these Bergers de Provence, and invariably found them infinitely superior to the aborigines, physically, intellectually, and socially. They remain in the district for the four or five summer months of the year, and then return with their flocks to Provence for the winter; for the right of pasturage within given limits they pay to the commune to whom it belongs the sum of one franc for each sheep of their flock.

During the night there was an alarm among our host's flock, caused by a troop of chamois who had come in search of salt. Leaving our quarters just before daybreak, we passed the Col d'Olan under the formidable Pic d'Olan, not to be confused with the glacier pass made by Mr. Pendlebury in 1875, and without much difficulty reached the Col des Sellettes, and from it made the second ascent of the Cime du Vallon, and then returned to the col.

The col is marked by a cairn of extraordinary stability and size, apparently of recent build. The large Glacier des Sellettes spreads out fan shape between the Cime du Vallon and the Pic d'Olan, seamed from side to side by enormous crevasses, and plentifully supplied with séracs. To descend it was certainly a tough piece of ice work. We began descending on the glacier, but were only able to get down about 200 ft. when we took to the rocks on the left, which, after descending a short distance, we found impracticable, and were forced to leave them. As the glacier itself was wholly impossible here, the only way lay down an icy gully between the ice and the rocks, which was so steep that we had to turn sideways and cut steps downwards with one hand while holding on with the other. Then followed a nasty ice-slope half covered

with insecure snow, and we were then landed amongst the ordinary troubles of a crevassed glacier, and in another half-hour our difficulties were over, and we stood upon the lower plateau of the glacier, not wholly sorry that our expedition was in retrospect.

We returned to La Bérarde, and from that made the first ascent of the Roche d'Alvau, a peak of 11,700 ft., between the Tête de Charrière and the Roche Faurio: it commands a splendid view of the Ecrins and the surrounding peaks, and is not very difficult of access except towards the summit, where steep rocks and loose stones render caution necessary. We had cloudy weather until the upper part of the Glacier de la Bonne Pierre was reached. This was our second start for this peak; on the first occasion a snowstorm drove us back to La Bérarde.

This was our last expedition from La Bérarde, and we closed our mountaineering campaign by an ascent of the Râteau and the passage of the Col de la Lauze to La Grave.

Of all our expeditions the ascent of the Râteau was the easiest, with the exception of the Pic des Arcas, than which, however, it was much shorter, the ascent occupying only 4 hrs. from the upper part of the Vallon du Diable, and the descent $2\frac{1}{2}$ hrs. When I was in Dauphiné five years ago, I had tried this peak from La Grave, but was driven back by bad weather when quite close to the summit. From that side the ascent is distinctly difficult, and was finally accomplished by the late M. Cordier. The late Miss Brevoort and Mr. Coolidge made the first ascent from the Vallon des Etançons, and found it not altogether easy. We made the first ascent from the Vallon du Diable, and found it wonderfully easy, excepting possibly the final arête, which is very sharp and forms an interesting piece of rockwork. We certainly had the snow in splendid order, which doubtless makes a difference.

The Société des Touristes du Dauphiné have built a hut on the rocks above the Glacier de la Selle; but when we were there it was only in course of erection, and, like the Irishman who rode in the bottomless sedan chair, we found that, but for the 'honour and glory of the thing,' we might have been as well without it; so for our second night we determined to find something more sheltered, which luckily we did, for when on the summit of the Râteau we espied in the distance towards the SW. signs of approaching bad weather, which before nightfall fairly set in, and next morning we found a foot of snow on the ground, and it was still snowing heavily.

Now all our letters and some of our luggage were at La Grave,

and it was absolutely necessary that we should get there by some means, and unless we crossed the Col de la Lauze we should have to descend to Venosc, and then either cross a tedious grass col to the Lautaret road or descend the valley of the Veneon to Le Clapier, and so up to La Grave by the uninteresting road—an idea not to be entertained if there were any way of escaping. We had on the previous day carefully reconnoitred the pass from the summit of the Râteau, with a view to the contingency which had arisen, so we determined to start. Throughout the day we guided ourselves entirely by map and compass, crossing the col in exactly the right place. We then traversed the Glacier du Mont de Lans in a NE. direction, hitting the secondary ridge between the Râteau and Peyrou d'Amont just below a conspicuous rock buttress which we had noticed the day before. A convenient snow-slope took us down out of the clouds and snowstorm towards the route of the Brèche de la Meije, and we descended to La Grave, frequently looking back at the beautiful dissolving views of the W. peak of the Meije caused by the snowstorm still raging round that mountain.

So closed our mountaineering expedition without guides, which from first to last had been accomplished without 'let or hindrance' of any kind. Shortly before leaving England our carefully-drawn-out arrangements were, from causes over which we had no control, threatened with annihilation, but these were happily surmounted. The weather, which in other parts of the Alps seems to have been very variable, was with us almost perfect, which was a great point in our favour.

That we were reasonably capable of undertaking the expeditions we accomplished we hope will be conceded to us, in which case any charge of rashness falls to the ground. That our example will not be widely followed we feel almost certain, for the conditions under which we worked were exceptional. In the first place we are much of an age, of equal physical powers and almost similar experience; secondly, we had been in the habit of wandering together in England among the mountains, which had given us confidence in each other; and, thirdly, we had exceptionally fine weather, and nearly all our expeditions were undertaken under the most favourable circumstances. Had any member of our party proved unequal to the work, or met with any accident or sickness, it would have caused our arrangements to collapse; and had not each of us been able to undertake his share in the 'heat and burden

of the day,' the result of our sojourn in Dauphiné would have been entirely different.*

ALPINE NOTES.

THE LATE DISASTROUS FIRE AT MEIRINGEN.—On Monday, February 10, the greater part of this most picturesque of Alpine villages was burnt to the ground. The fire is said to have owed its origin to sparks from a bakehouse furnace immediately adjoining the 'Gasthof zum Wilden Mann.' This hotel was soon a sheet of fire, and, fanned by the strong SW. wind (Föhn), the flames proceeded thence in a northerly direction along the Brünig road, destroying all that came in their course. Part of Meiringen Dorf and the whole of the outlying hamlets of Eisenbolgen and Hausen were thus in turn completely reduced to ashes. Those portions of the village which lie to the west and south of the 'Wilde Mann' were fortunately saved—the same wind which had proved so treacherous elsewhere acting as a protection against the spread of the flames in these directions. Immediately upon the receipt of the news in England, a fund, short particulars of which will be found elsewhere, was started, under the auspices of the Alpine Club, for the relief of the sufferers by the disaster. The total damage is estimated at over 1,000,000 francs, of which, however, at least two-thirds is covered by insurances and by the very liberal contributions of the Swiss and English public. The following letter from the British Minister at Berne, who kindly undertook to see to the distribution of the fund, to the Secretary of the Club, gives full particulars :—

'British Legation, Berne, March 18.

'Sir,—I beg to enclose to you herewith a copy of an official acknowledgment I have received from M. de Steiger, Conseiller d'Etat, and President of the Meiringen Relief Fund, for the contributions sent from England in aid of the sufferers by the recent fire in that village. You will observe that the subscriptions reached in round numbers the sum of 13,500f.—an amount far exceeding anything I hoped to obtain by this

* In the 'Saturday Review' a notice of our expeditions in Dauphiné appeared in an article on 'The Alps in 1878.' Although the criticism was as favourable as we could expect, the details were so far from correct that I think it well to state here that we, in fact, accomplished fifteen high glacier expeditions without guides, of which eight were new, and *not* eight guideless expeditions of which four were new as stated. The reviewer went on to remark, with regard to the expeditions we made, that 'it is true they were very little ones.' Now of the peaks we climbed the Ecrins reaches the respectable height of 13,462 feet, the Pelvoux to nearly 13,000 feet, while the others range from 11,340 feet to about 12,500 feet, so that they scarcely deserve to be stigmatised as 'very little ones;' but in any case the initiated well know that the difficulty of a mountain does not depend upon its altitude.

appeal I made in the columns of the "Times." To all those who have so generously contributed to this good work, and especially to the members of the Alpine Club, I beg herewith to offer my very sincere thanks. They may be assured that the sympathy they have shown for the inhabitants of the afflicted village will be duly appreciated by the Swiss people at large. M. de Steiger has been good enough to furnish me with a few particulars of the losses sustained, which I think it right to transcribe for the information of those who have taken so kind an interest in the matter. The loss in buildings is reckoned at 661,600f., and that in furniture, implements, &c., at 358,500f. The total loss, therefore, amounts to 1,020,100f. Of this, however, 367,000f. are covered by house insurances and 100,000f. by insurances on furniture. The net loss is thus reduced to 553,100f. You will be glad to hear that to meet this the committee at Meiringen hold at the present moment in cash a sum of no less than 120,000f., while here at Berne there is a further reserve fund of 50,000f. Altogether M. de Steiger counts on a sum of at least 180,000f., which will be principally devoted to the rebuilding of the village. This is quite exclusive of the abundant gifts of provisions, clothing, bedding, furniture, &c., which poured in from all parts of Switzerland immediately after the fire, and at once supplied the most pressing wants of the sufferers. The homeless children of the village have been placed with private families or in the charitable institutions of this city, while the adults have been distributed among the different households that were spared by the fire. Work has been provided for all, and on the whole it may be said that this great calamity has been met by corresponding energy and devotion. M. de Steiger is loud in his praise of the patient resignation and orderly spirit shown by these poor people in their affliction. In rebuilding the village it will be endeavoured, as far as possible, to avoid placing the houses again in a straight line with the direction of the treacherous Föhn, or south wind. It has also been decided to substitute tiles for the shingle roofs which helped to spread the flames in so disastrous a manner. I enclose copies of a plan showing the extent of the fire.

'I remain, Sir, your obedient servant,

'HORACE RUMBOLD.

'W. E. Davidson, Esq., Alpine Club, London.'

'Berne, le 18 mars.

'Le soussigné déclare par la présente avoir reçu par Sir Horace Rumbold, bart., Ministre de S. M. Britannique à Berne, la somme de 13,500f. comme résultat de collectes faites en Angleterre pour les incendies de Meiringen. En remerciant tous les donateurs de la manière noble et généreuse dont ils ont bien voulu participer à notre œuvre de secours, ainsi que Sir Horace Rumbold des soins qu'il a bien voulu y porter, nous nous réjouissons aussi de pouvoir assurer tous les bien-faiteurs que leurs dons seront employés d'une manière parfaitement sage et juste.

'EDM. DE STEIGER, Conseiller d'Etat.

'Le Président du Comité de secours pour les incendies de Meiringen.'

MOUNTAIN HUTS IN THE CHAIN OF MONT BLANC.—A great im-

provement has been apparent of late in the construction and arrangement of huts in the Alps. The Swiss and Italian Clubs have devoted much time and money to this department of their useful work. I visited the Col du Géant and Aiguille Grise cabanes this summer, and found them, in most respects, excellent. The former, erected in 1876, as I have already noticed in the Journal, is situated on the col, close to the spot where De Saussure's tents once stood. It is furnished with a good stove and a fair supply of general ware, necessary for the use of mountaineers. A string hammock is suspended over the sleeping-boards; but this hardly compensates for the mere wisp of straw, which was all the hut could boast of when I was there in August last.

Not less convenient in every way, and built after the same model as the former, is the hut on the Aiguille Grise, just above the Glacier de Miage, which was erected three years ago. The difficulty experienced in transporting planks, &c., across the hanging glacier beneath must have been very considerable; no less than 40 guides were employed for the purpose. The apparent difficulty of obtaining water in the neighbourhood is a drawback to its position, though no doubt inevitable. Both these huts are made entirely of pine wood, without outer casing of any sort, which they ought to have, or else time and storm will soon leave their marks upon them. The roof of the latter is at present, happily, waterproof—otherwise, I should have been thoroughly drenched whilst sleeping in it on August 19. But unless roof and sides are protected more than at present they are likely to suffer materially in severe winters. The Col du Géant hut, as well as that on the Aiguille Grise, was put up by the guides, who had the wood supplied to them by the commune and were well assisted by the Italian Alpine Club, at a cost of about 200 fr. for each. A supply of blankets would be a serviceable addition to their store of internal furniture.

But the best cabane constructed of late in this region of the Alps is that at the foot of the Glacier d'Orny, just within the Swiss frontier. The Diablerets section of the Swiss Alpine Club deserves the greatest credit for its erection, both as to design and execution. Most substantially built of stone and mortar, and surmounted by a good zinc roof, this model hut leaves nothing to be desired, inside or out. It is capitally supplied with cooking utensils, &c., a quantity of blankets, and plenty of fresh straw. Twelve persons can sleep in it comfortably. The 'Livres des Voyageurs,' thoughtfully presented by Mr. H. R. Whitehouse, already bears ample testimony to the appreciation in which it is held by those who have visited it. The stove is so fitted in the partition wall of the two rooms as to give warmth to both. The hut was formally opened by the Swiss Alpine Club in August, 1877, after no less than 1,400 fr. had been expended by them in its construction. This makes the twenty-third mountain refuge which has been inaugurated by this Club alone, each of them being placed under the patronage and superintendence of one or other of its sections.

F. T. WETHERED.

COL DOLENT.—Mr. W. E. Davidson sends the following note :—' On

September 2, last year, Mr. J. W. Hartley and I, with Laurent Lanier and Johann Jaun, made the second passage of the Col Dolent, reversing the route followed for the first time by Mr. Whympfer in 1865. We slept at the Châlets de Lognan the previous night, and starting thence at 3.30 A.M. arrived at the foot of the great couloir which leads from the head of the Argentière Glacier to the col at about 8. Starting again at 8.45 we went, including some short halts, from this place to the summit of the pass in *just two hours*. The only real difficulty we found during the whole ascent was in effecting a lodgment on the rocks on the left side (ascending) of the great couloir. In order to gain these rocks we were obliged to cut up a short slope of black ice set at a very sharp angle; and so hard was the ice and so steep the inclination, that the eighty and odd steps which were required cost Lanier upwards of an hour's hard work. Here, however, our task was practically over, and we mounted easily and rapidly to the summit of the pass, which was gained at 10.50 A.M. The couloir itself was (and I think probably always is) just what Mr. Whympfer describes it to have been in 1865—"a slope more than 1,000 feet long, set at an angle of 50°, which was a sheet of ice from top to bottom"—and if there were no alternative route the pass would fully deserve the evil reputation with which it has been branded by the almost unimpeachable authority of Ball's "Alpine Guide." I believe, however, that the rocks by which we ascended will almost always be found practicable either of ascent or of descent, for although steep they are everywhere admirably firm and good. On the Italian side of the pass we met with no serious difficulty, but it is desirable to keep well away to the left in descending the Glacier du Mont Dolent. I write these few lines in the desire to rescue from oblivion one of the very finest passes in the whole range of the Alps, and in the belief that, under proper conditions and with first-rate guides, it can be accomplished with perfect safety and without extraordinary difficulty. The expedition should, however, be made *from* the Argentière Glacier, as the *descent* of the ice-slope at the foot of the great couloir would be, if not unadvisable, at least very difficult.

'We slept the following night at the Châlets de St. Jean in the Val Ferret, where we were received with a hospitality so cordial that it seems almost churlish even to hint that we endured very considerable discomfort, and returned next day to Chamonix by the Col de Talèfre, crossing this pass *from* the Glacier de Triolet *to* the Glacier de Talèfre for the first time. It is advisable, when making the descent from the col to the Glacier de Talèfre late in the day, to keep as much as possible to the rocks on the right of the couloir in order to avoid the stones which, when the sun is well up, sometimes fall in considerable numbers across the usual route.

'There is an excellent site for a cabane, which it is to be hoped may soon be utilised, on the left bank (descending) of the Glacier de Triolet about 3 hours up from the Val Ferret. From this place the Col de Talèfre can be easily reached in 2½ hours, and the Col de Triolet in 3½; while for more ambitious climbers the Cols de l'Echaud, de l'Eboulement, and de Pierre-Joseph, and the ascent of the Aiguille de Triolet are within available reach. The distance from Courmayeur almost pro-

hibits starting from that place for even the easiest and shortest of these expeditions, while as to the châteaux—*experto crede.*'

HUT ON THE GROSS GLOCKNER.—Herr Julius Meurer sends the following note:—'The Alpen-Club Oesterreich, newly founded in Vienna, have the intention of building a hut on the Adlers Ruhe, at an elevation of about 11,330 feet. The summit of the Gross Glockner, which lies a little over 1,000 feet above this point, will thus be attainable in about an hour from a comfortable refuge. The view from the point selected is described as very fine; and the hut itself, which, judging from the plans, will be commodious, will be situated in a well-sheltered spot. It is proposed, in memory of the late Imperial Archduke Johann (himself a great lover of the mountains), to name the hut the "Archduke Johann." It will be situated higher than any hut in the Eastern Alps.'

THE ROSENGARTEN GEBIRGE.—The pass described by me in the November number, and for which I suggested the name of Vajolet Pass, is, it appears, known to the people of the country, and called by them the Tschagerjoch. It has, I find, been referred to in the publications of the German Alpine Club; but having been, as I believe, completely ignored by guide-books, was considered by me at the time as a new route, as it was to English mountaineers.—C. C. TUCKER.

NOTES ON THE INNS IN THE TARENNAISE.—PRALOGNAN.—The Hôtel de la Vanoise, kept by Favre, at Le Barioz, the next hamlet above the church town, offers very fair quarters to mountaineers wishing to explore the Tarentaise. There are several bedrooms, all tolerably clean; fresh meat is generally to be had, and the prices are moderate. M. Favre takes a great interest in Alpine matters, and can give much useful local information, and is very thankful for any suggestions for the improvement and management of his hôtel.

LA MOTTE.—Châlets, two hours from Pralognan on the Chavière path. Two beds are reserved for travellers, and the usual châlet fare is to be had. The situation is advantageous for exploring the Péclet *massif*, or the great snow-field of the Glacier de la Vanoise.

ENTRE DEUX EAUX.—The châlet inn, chez Rosaz, the highest house of the hamlet, has one single and one double bed, and can supply bread, cheese, and wine. The prices are rather high. Another auberge, chez Richard, has one bed. The owners are said to be civil and obliging, but the supplies scanty. It would probably be possible to ascend the Grande Casse directly from here, arriving at the depression between the two summits, seen from the valley.

TIGNES.—The Hôtel du Club Alpin, chez David Révial, has greatly improved. The beds are clean, and the food (especially the cheese) very fair indeed. The proprietor is building a new wing, to be reserved exclusively for Alpine travellers. The prices are moderate.

LA VAL DE TIGNES.—The auberge kept by Joseph Marie Bonnevie, just above the church, offers tolerable quarters. There are several beds and the food is fair. The prices are extremely moderate.

LE BOIS IN VAL DE PRÉMOU.—I was received very hospitably at this hamlet by the Mayor of Champagny, M. Landre Ruffier. There was plenty of hay and straw in the barn, and the charges were absurdly low; but the food was poor and scanty.—W. A. B. COOLIDGE.

ALPINE MEETINGS.—An 'international' meeting of Alpine Clubists is to be held at Geneva under the auspices of the Swiss Club in the first week in August.

Between the 15th and 20th of August a meeting of Italian Clubists is to be held at Perugia. Papers will be read on Umbria and its antiquities; there will be an Exhibition, 'Artistical, Industrial, and Agricultural,' and excursions will be organised in the neighbouring Apennines, including the ascent of Monte Vettore, 6,585 ft.

ALPINE PHOTOGRAPHY.—Herr Beck of Strassburg has presented to the Alpine Club some specimens of his photographs of the snow-region which have gained a great reputation abroad. Some of the views, notably those of the chain of the Ebnefluh from the Jungfrau, are very striking and singularly good as photographs, and all the views are interesting topographically, and, as exact records of mountain forms, will suggest recollections of past, or hopes of future, enjoyment to Alpine climbers. The views sent are all in the Oberland.

We would suggest that a series of photographs, chosen with an eye to picturesque effect, of sérac forms, of clouds, of cornices, 'Bergschrunden,' and other strange beauties of the snow-region, would be probably successful. The start made in this direction by Bisson Frères has never been properly followed out. Nor have the admirable small photographs of Tairraz of Chamonix, some of them taken on the top of Mont Blanc, excited French photographers with larger means at their disposal to further advance. Alpine photography is yet in its infancy; and the combination of local knowledge, technical skill, and artistic feeling necessary for the production of first-rate work is not likely to be often met with. Some of the best work we have yet seen are the photographs of the Orteler group published at Botzen. An exhibition of Alpine photography might do something to stimulate photographers, and by example of the best work they might learn as a body to take more pains to endeavour to obtain a picture as well as a view.

LITERATURE.—Two standard works of interest to intelligent travellers are being republished in improved and revised cheap editions in monthly volumes, by F. Schulthess, of Zürich, viz. O. Heer, 'Die Urwelt der Schweiz,' illustrated; Dr. Christ, 'Das Pflanzenleben der Schweiz,' illustrated. Specimen numbers are to be seen at the Club-rooms. Messrs. Wurster & Co., of Zürich, have published a 'Manuel du Voyageur,' or volume of instructions of how to travel and what to observe, which seems carefully compiled and well got up.

Two illustrated works, 'A Gressoney per Val d'Andorno,' and 'In Val Sesia, Album d'un Alpinista,' Biella, Amosso, 1878, have lately been published, and are on the table of the Alpine Club. They consist of a series of lithographed sketches of landscape and figure subjects of a character with which English readers have been made familiar in 'How we spent the Summer' and the other works of the same authoress. The present drawings are spirited and characteristic, and give pleasant recollections of the scenery of the beautiful southern valleys of Monte Rosa, and of the life of their inhabitants.

GRAND CORNIER FROM THE NORTH.—*Erratum.*—For 'viâ the summit of the Bouquetin' in my note on the Grand Cornier, published in

the 'Alpine Journal' for November, 1878 (p. 106), read 'viâ the summit of the Pigne de la Lée.'

F. T. WETHERED.

PROCEEDINGS OF THE ALPINE CLUB.

February 4, 1879.—Mr. C. E. MATHEWS, *President, in the chair.*

The Rev. H. W. Majendie and Messrs. C. E. Freeman and B. Wainwright were elected members of the Club. The accounts for 1878 were passed. The Honorary Librarian made his report as to the condition of the library and collection of maps, the latter being in his opinion in an incomplete and unsatisfactory state.

Mr. C. T. DENT read a paper on 'The Ascent of the Aiguille du Dru.'

March 4, 1879.—Mr. C. E. MATHEWS, *President, in the chair.*

Messrs. J. W. Smith and A. Caddick were elected members of the Club.

The President read a letter from Herr Meurer of Vienna, announcing that a new Austrian Alpine Club had been founded in that city, which now numbers 560 members. It may be remembered that some years ago the original Austrian Alpine Club amalgamated with the German. Herr Meurer, the Secretary, forwarded a copy of the 'Alpenzeitung,' the periodical of the new Club, and expressed its warm desire to enter into friendly relations with the English Club.

The President stated that Mr. Dent had gone abroad for some time, and moved 'That Mr. W. E. Davidson be appointed acting Honorary Secretary during the absence of Mr. Dent.' This was seconded by Mr. A. W. Moore, and carried unanimously.

The Rev. F. T. WETHERED read a paper on 'An Ascent of the Tüschhorn from the Fée Glacier.'

April 1, 1879.—Mr. C. E. MATHEWS, *President, in the chair.*

Mr. GARDINER read a paper on 'Mountaineering in Dauphiné without Guides in 1878,' which was illustrated by some excellent maps and sketches, the work of Mr. C. Pilkington. At the conclusion of the paper an interesting discussion followed, in which the President, Messrs. Coolidge, Cust, Freshfield, Moore, and Gardiner took part. Mr. Gardiner and his companions (Messrs. C. and L. Pilkington) were on all sides warmly congratulated on the remarkable success of their experiment. A general feeling of satisfaction was expressed that it should have been reserved to three members of the Alpine Club to show to what an extraordinary degree of skill mountaineers of exceptional experience and aptitude might in rare instances attain. But it appeared at the same time to be strongly felt that Messrs. Gardiner and Pilkingtons' example was only to be followed with impunity by equally competent mountaineers; and that there was no reason for the club to alter its previously expressed opinion that 'mountaineering without guides' is for 'the general' a highly dangerous form of amusement which it is its duty, as a body, to discourage.

Mons. Loppé will exhibit a collection of Alpine Pictures and Sketches in the Club-rooms during May and June.

THE
ALPINE JOURNAL.

AUGUST 1879.

THE ROCKY MOUNTAIN REGION OF WYOMING AND IDAHO.
Read before the Alpine Club, June 3, 1879.

IN the present dearth of new ascents and new fields of Alpine exploration in Europe, a short sketch of a mountain region little known, and hitherto visited only by a few exploring expeditions and trappers, may not be without interest to the Alpine Club. Although the mountains of Wyoming and Idaho are generally inferior in elevation to the Rocky Mountains of Colorado further south, yet the much greater scale of the ancient glacial phenomena in these more northern ranges, and the actual presence of a few small glaciers, until last year undiscovered in the great central chain of America, render this section of the utmost interest to the glacialist and Alpine traveller.

When at Washington in the spring of last year, Dr. Hayden, the energetic director of the survey of the Territories, learning my intention of visiting the Geysir basins and Yellowstone region during my travels, most hospitably suggested that I should join one of his parties in the following July, and visit the Wind River mountains and the range of the Tetons *en route*. I accepted this kind offer with alacrity, for not only was the route new, but there was also an additional inducement in the fact that Mr. A. D. Wilson, who is in charge of the primary triangulation of the survey, was to be of the party, and his work would necessitate the ascent of some of the higher peaks. I had heard much of the highest peak of the Teton range, and its reputation as one of the most difficult mountains in the United States did not lessen my desire to attempt its ascent.

The interval from April to July I passed in Colorado and Utah; but the season was too early for much travelling among the mountains. An attempt to push as far as the Elk mountains failed in consequence of the impossibility of getting my

mules over the great accumulations of snow on the passes near the head of the Arkansas river; and the swollen state of the rivers also caused us much obstruction.

In the middle of July I returned to Cheyenne on the Union Pacific Railway, the rendezvous and outfitting depôt of Hayden's parties. They arrived on the 19th, and five days were spent in the necessary preparations. On the 23rd the packers, mules, and provisions were despatched by train to their respective points of departure on the railroad, and on the 24th the various members of the surveying parties followed, arriving on the morning of the 25th at Point of Rocks station. Here Dr. Hayden, Messrs. Wilson, Holmes (geologist), and Jackson (photographer to the survey), together with my own party, disembarked, leaving another party under the direction of Mr. H. Gannett and Dr. Peale to continue by rail as far as Green River station, from which point they would proceed in a direction roughly parallel with our own, and ultimately join with us in the Yellowstone district. My own party, besides myself, consisted of Michel Payot of Chamonix, a packer, and a cook.

Our course lay approximately north, over a portion of the Green River basin towards a prominent gap near the southeastern extremity of the Wind River range. Our first camp after quitting the railroad was near a series of interesting little ancient volcanoes, probably of post-Tertiary age, which rise from 600 to 1,000 feet above the general level. A considerable part of the Green River basin consists of the 'bad lands,' the 'mauvaises terres,' of the Canadian travellers—and over these we travelled for five days, including a halt of the greater part of a day for observations on the solar eclipse of July 29th. These 'bad lands,' although of great interest to the geologist, are not pleasant to travel over. The most characteristic formation is one of variegated sandstones, shales, and marls, the layers of which being generally horizontal, or nearly so, are sculptured by the weather into all sorts of fantastic architectural forms. Water and grass are scarce, and the former often bad, and strongly alkaline. There are no trees except a few dwarfed cottonwood trees or aspens near the rare springs; but sage brush (*Artemisia tridentata*) is often of dense growth, and the ground on which this shrub occurs is often coated with a white alkaline incrustation which, if there is any wind, is disagreeable to eyes, nose, and lips. In July the nights are cold, much colder than at considerably greater altitudes in the mountainous districts. The general elevation of this basin above sea-level ranges from 6,200 to 7,300 feet.

On the evening of July 30 we camped about 15 miles from the gap above mentioned. Here it is necessary to remark upon the topography of this region. Roughly speaking, the head of the basin of the Green River, the principal stream of the great Colorado River, is enclosed by two chains of mountains, the Wind River and Wyoming ranges, which converge towards the north; the first mentioned and more important extending about 70 miles in a north-west and south-east direction; the latter, on the western flank of the basin, running nearly north and south; but although the Wyoming range is a well marked chain of mountains, none of its peaks attain to any considerable altitude. Both these chains are connected with each other near their northern extremities by the smaller transverse range of the Grosventre mountains. To the north of the Grosventre mountains is the Snake River, the southern branch of the Columbia. This river, rising in the Shoshone lake, flows along the eastern base of the Teton range, the direction of which nearly coincides with the line of continuation to the north of the Wyoming range, and on arriving at a depression separating the Wyoming and Teton mountains breaks through it to the west in a deep and long cañon.

Our camp of the 30th was near the south-east end of the Wind River mountains, and on the evening of that day we had quitted the Tertiary formations of the Green River basin, and were now camped on a low, extensive, but irregular, sort of granite plateau, which bordered the whole south-western flank of the range, increasing considerably in elevation towards the north-west. Near our camp it sloped almost down to the level of the plain, and stretched out further from the base of the mountains than in other localities. Our altitude was here, judging from previous and subsequent observations, about 7,200 feet. The appearance of the south-east end of the range was not imposing; but the higher peaks were masked. The next day we started at 7.45 A.M., and after riding three hours across the plateau formed our main camp, whence, after leaving tents and heavier baggage, about half of the party started at 12.30, with three days' provisions, for the ascent of Wind River Peak, the highest of this portion of the chain. The scene now changed rapidly. In less than an hour we crossed the headwaters of the Sweetwater, and mounted the sides of a large moraine overgrown with dense timber, through which we passed along an Indian trail. The moraine filled the lower part of the valley, descending from the gap in the range, and on its irregular, forest-covered surface the depressions were occupied by beautiful little lakes, some of which were nearly covered with

water-lilies. The col was reached about 5 p.m., and found to be about 10,500 ft. above sea level. Descending on the east side of the watershed towards the Wind River valley, in less than an hour we turned up a creek which enters the main stream from the north, and at 6.30 reached a shallow lake in a large rocky basin, near which we camped. We suffered much from the mosquitos, which were here unusually numerous and active. Whether their untiring pertinacity was due to change of diet from the thick-skinned red man to the more thin-skinned white, I cannot assert with scientific accuracy; but I was rather surprised at the time to find that nether garments, unless of close texture, are little protection against their attacks.

On August 1 we started from camp at 6.20 A.M. to ascend Wind River Peak, Hayden, Wilson and Holmes on mules, Michel and I on foot. For the first half hour we passed through pine woods; then coming in view of the peak, the route was obvious, and we arrived at the summit about 9 A.M., the mules having been picketed about 1,500 feet below. The ascent was ridiculously easy for a mountain of 13,400 feet, so much so that I was totally unprepared for the sudden descent on the east side of the mountain, which was so sheer and unexpected as to be positively startling. From the top we immediately perceived a glacier at the base of the north-east precipice about 1,700 feet below us. My companions had at first some doubts as to its being a true glacier, so while they were engaged on the summit I descended with Michel on to its surface. It was, indeed, of very small size, but there could be no doubt as to its genuine character. It headed in a depression a little north of the peak; was about three-quarters of a mile long, and 800 yards broad in its widest part, and its general direction was east-north-east. The cliffs on its northern side, forming an irregular spur from the main peak, were of excessive steepness, and were grooved and polished almost to the top of the spur.

Instead of rejoining our companions, Michel and I struck out a different route towards camp, passing over an intermediate summit in the hope of finding mountain sheep, and fell in with the main party on their return in the afternoon. The same evening, on ascending a hill near camp and about 1,000 feet above it, I found the top covered with striæ and grooves running in the direction of the lateral valley, viz., nearly north and south. It was clear that the glaciers on this side of the watershed had been of much greater extent than on the southwestern side; and I had a strong suspicion, which I had not time to verify, that the glaciers on this north-east side of the

range, being piled up to a higher level than the col over which we had passed, for a time overflowed through it to the west. This would be a precisely similar case to that of the ancient Ober-Aar Glacier, when it passed over the watershed above the Grimsel, and overflowed into the Rhone Valley.

The next morning early, while the remainder of the party returned to the main camp of July 31, I accompanied Messrs. Wilson and Jackson a little distance up the lateral valley, and then mounted up to a beautifully situated lake basin encircled by steep cliffs, where a few hours were spent in photographing. We then returned across the watershed to our camp on the west of the range.

The next day, August 3, we broke camp. Our next object of attack was Fremont's Peak, reputedly the highest of the Wind River mountains and about forty miles further north-west. Not being able to continue along the granite plateau, which was too much broken up to allow the passage of a pack train, we made a detour nearly west, descending along the edge of the Green River plain, and camped that evening on the banks of the Big Sandy River, a tributary of the Green River. The following day we reached another tributary, one of the several so-called New Forks. We were now close to the edge of the granite plateau, and this day we had passed several masses of morainal detritus which had been brought down from the plateau on to the plain. In the evening we ascended a granite hill or 'butte,' west of camp, a kind of outlier of the plateau, from which we had a good view of the range, which in this region is much more rugged and picturesque than near its south-eastern extremity. Fremont's Peak was yet about thirty miles distant, and its appearance from here gave promise of a stiff climb.

On the morning of the 5th we pursued our journey, and in 3 hours arrived at the foot of a considerable moraine. We ascended this, and found that we had struck a series of large concentric terminal moraines, one within the other, inside which was enclosed a beautiful irregular lake about five miles long. Except at its eastern end nearer the mountains, it was entirely surrounded by moraines, and on its sides they rose upwards of 1,000 feet above its level. It was by far the most perfect and striking instance of a lake formed in this manner that I had ever seen. A glacier at least fifteen miles long had stretched from the central chain across the granite plateau, and had then descended into the plain; and on its retreat the lake had been formed from its melting within the moraines which it had accumulated.

But a more wonderful exhibition of old glaciation was still in store. After riding two hours further in a north-westerly direction over numerous moraine heaps, we came to a long granite hill rising about 1,200 feet above the plain and trending in a direction parallel with the range. On ascending it, we found it to be directly opposite to a considerable wide depression in the granite plateau, which extended beyond to the axis of the Wind River chain. This depression had formerly been filled up by a large glacier, which descending in a long ice fall from the plateau, had scooped out a deep rock basin, now occupied by a lake, between the plateau and the hill on which we stood. Its straight course then being obstructed by the hill directly in front, the glacier split into two branches, corresponding with the two arms of the present lake, and leaving a large moraine on the weather side of the hill, swept round the flanks of the latter into the plain beyond, where its fan-shaped extremities nearly united at a distance of about twenty miles from its head. From our point of view the terminal moraines on the plain resembled great lava flows; and one of the lateral moraines below the granite plateau was fully 1,200 feet above the lake. Never had I seen the records of ancient glaciers written in such distinct characters. In the Alps the old glaciers were immensely greater, but their remains are but fragmentary. Rain and torrents have done their work of obliteration. Here, on the contrary, owing to subsequent slight rain-fall, the forms of the moraines are almost as marked and undisturbed as if they had been deposited only a century or two ago. Ice alone is needed to restore the picture.

From the north end of the hill we came in sight of another lake seven or eight miles long, and of considerable width, issuing from a deep cleft in the range, and similarly enclosed by a series of great lateral and terminal moraines one within another. We made towards this lake, and at its western extremity came up with our pack train about 7 P.M., and found it encamped. The situation was charming, and as this appeared to be a good place for a start for Fremont's Peak, it was decided to fix our main camp here for several days.

On August 6, leaving behind tents and superfluous baggage, we partly retraced our steps of the day before and followed the southern lateral moraine of the lake until we arrived at the steep slope at the edge of the plateau. This we found easy travelling at first, open glades alternating with patches of forest; but the ground soon became more broken and craggy, until at last we were brought to a halt near a small rock-bound lake about two miles long, round either side of which it

was impossible to proceed with animals; here we camped at a height of about 10,000 feet. We were about five miles in direct line from Fremont's Peak and had a good view of the upper face of the mountain. It appeared to be very precipitous, and during our ride some doubts had been expressed as to our success, but a steep spur abutting against the face now seemed to promise a practicable route. It would have been difficult to choose a more picturesque site for camp. We were at one end of a considerable depression, the view on all sides except that in the direction of a part of the main range being shut out by more or less rounded hills rising not more than 1,000 or 1,200 feet above us; but the view of the main peak and a few adjacent summits was set off finely by the lake in the foreground and its rocky sides.

Next morning, after an early breakfast, we started at 4.35. The route was over the rounded granite bosses on the south-east side of the lake, and these were occasionally so smooth and steep as to necessitate a good deal of scrambling. Wilson, who is a capital mountaineer, led the way at a pace which, just after an imprudently profuse breakfast, was decidedly embarrassing. Acting on the principle of 'assume a virtue though you have it not,' I struggled on in dignified if uncomfortable silence, but Michel's remonstrances if not generally intelligible were certainly sufficiently audible. On reaching the further end of the lake we struck off nearly east until our direct course was stopped by another lake lying almost at right angles to the last. We rounded the southern end of this lake in about 2½ hours from the start, and after keeping a short time along its eastern bank turned off sharp towards the extremity of the long spur running south-west from the face of Fremont's Peak which we had observed the day before. Keeping on the south of this we entered a large amphitheatre with two small lakes surrounded by four peaks, that most to the north being Fremont's Peak, and from one of them a small glacier descended towards the hollow. At 8.50 we reached the point where the spur abuts against the west face of the peak, and after a rough but easy climb gained the summit shortly after 10 o'clock.

On the eastern side of the mountain two fair-sized glaciers, whose lower ends were not visible, descend towards the Wind River plain. We found no record or trace of any previous ascent. Indeed it was supposed that the point which Fremont had ascended in 1842 was a lower summit some distance to the south, but his description of the latter part of the ascent agrees to a great extent with our experience, and the great snowfield seen by him on the other side may be identical with

the glacier which we saw. However this may be, I cannot understand the extreme difficulties which he experienced in the ascent, even though his route to the base of the peak lay more to the south than ours, his starting base being the first lake we saw on August 5.

The distant view from the summit was rather disappointing. Far south only slight indications of the Uintah range could be made out owing to the distant haze. The same cause prevented the Big Horn Mountains to the east from being visible; but the Tetons to the north-west were well seen overtopping everything in that quarter. In the immediate neighbourhood a peak about four miles north-west appeared to be 30 or 40 feet higher than our own, the elevation of which was 13,700 feet. In addition to the two glaciers abovementioned, which are the largest we saw, minor glaciers are not uncommon; and this range, with the Tetons and possibly some corners of the Big Horn Mountains, are the last refuges for expiring glaciers in the Central Rocky Mountain system of the United States. In a short time they will have abandoned even these remote recesses.

After staying nearly three hours on the summit, we returned to camp by a slight variation on our morning's route, Michel and I arriving late in camp in consequence of having had a long search for a rifle which he had left behind during the ascent. The next morning was occupied in photographing from a point about 1,000 feet above the lake, and in the afternoon we returned to the main camp of the 5th on the big lake. The next day was spent in hunting in the neighbourhood, and on August 10 we quitted the lake and the Wind River Mountains and travelled north-west over the plain. We crossed the Green River in the evening and camped on its bank, between twenty and thirty miles below its source at the north-west end of the Wind River Mountains. The next morning we continued in the direction of the Grosventre Mountains, and in a few hours arrived at a low irregular watershed (7,800 feet) which divides the drainage of the Green River and Snake River systems. Curiously enough the Grosventre Mountains do not form the watershed here, but the streams running into the Snake from the south actually head on the south side of the Grosventre range and cut their course through it. On one of these streams, Hoback's River, we camped that evening after a long ride, and on the 12th, still following the course of the creek, we entered a cañon in the Grosventre Mountains. For some time the route, which was along an old Indian trail, was easy, and we had ample leisure to admire the

beautiful scenery of the cañon; but when the trail mounted the sides of the river we had enough to do to look after our animals. The footing was treacherous in places, and at one particularly nasty spot one of my pack mules slipped and rolled over into the river 150 feet below. Beyond superficial cuts he was none the worse, and after disengaging himself from his load, containing my blankets and baggage, he left it to soak in mid-stream, and quietly walked off to the other side to graze. We camped about 5 P.M. in a deep hollow, being doubtful about finding good pasture further on. We reckoned we were now only a few miles from the junction of our stream with the Snake, and it had been arranged that on arriving at this river we were to split into two parties.

Hayden, Holmes and Jackson were to proceed due north along the east side of the Teton range, while Wilson and my party were to cross the Snake above the junction of Hoback's River, and after making a considerable detour round the south end of the range, attack the chief summit from the west; then after following the course of the Henry's Fork of the Snake and arriving at Henry's Lake, we were to strike east and join Dr. Hayden's party again in ten days or a fortnight in the Upper or Lower Geysir basin. Unfortunately this arrangement was upset as far as concerned myself by an unforeseen contretemps. On collecting the mules on the morning of the 13th, two of my pack mules were missing. These animals have an annoying habit of straying during night towards their previous camp, but on this occasion from the position of our present camp and the difficulty of the trail passed over on the previous day, this explanation of their absence was thought highly improbable. Their speedy recovery was considered so certain that Hayden's and Wilson's parties started about ten o'clock, leaving me to follow; but, at the last moment, thinking that the mules might possibly have gone back on the trail, I told Wilson that if I could not get as far as the ford of the Snake that evening I should not attempt to follow him, but keep straight up the river and endeavour to overtake Hayden's party. I knew that Wilson had no time to spare, and did not consider I should be justified in causing any delay in his work; and my pack mules, not being so good as his, were not equal to a forced march after him. About noon their tracks were found on the back trail some miles from camp, but the search was unsuccessful, and my men returned near midnight to camp. They started again early next morning with fresh animals and a day's provisions. Night came and passed but neither men nor animals turned up, and as I had told the men that in case

they could not recover the mules that day I should go on without further search, I began to have serious fear that they had fallen in with hostile Indians. Next morning I set off early on foot along the trail, leaving Michel to look after the remaining animals, and towards noon was delighted to see men and mules appear in the distance. The men had gone back as far as the Green River, our camp of the 10th, having found occasional tracks, but no animals, and after a fatiguing day's work halted about 11 P.M., when after supper the missing mules walked right up to their fire. The condition of the mules on their return to camp was such that further advance that day was out of the question. Besides, I had no fear of not being able to overtake Dr. Hayden's party somewhere near Jackson's Lake, east of the Tetons, where they had several days' work, with which the cloudy weather of the last two days would have interfered. Towards evening Steve Hovey, Hayden's head packer, rode into camp. Finding that we had not been at the ford where he had left a note for me, Dr. Hayden had become apprehensive and sent Hovey to bring him news of us. We started next day, August 16, at 8 A.M. and camped on the Snake River considerably above the ford. The scenery of this valley is so fine that I almost forgot my disappointment at not being able to join Wilson's party. The only drawback to the traveller is that this district is a great summer resort for the Shoshone Indians, and although they are generally friendly, travelling is not quite safe for a very small party. At this time, owing to the Bannack war, the valley was deserted, and we did not see a single Indian between the Green River and the Yellowstone. The Snake, above the cañon, is a stately deep-flowing river between moderately high banks, and about 80 yards wide. Trout are generally abundant and of large size. Grasshoppers are invariably the best bait.

The weather, which had been threatening for some days, now broke, and it rained heavily all night, and in the morning the clouds were low down on the Teton mountains. We started early on the 17th, and came up with Hayden's party early in the afternoon. The clouds lifted later, and from a hill east of camp we got a magnificent view of the southern part of the Teton range. Although not so high as many of the Colorado mountains, they are far more impressive and picturesque, rising immediately from the valley to a height of more than 7,000 ft. above the river, the height of the Grand Teton being 13,691 ft. On the other side of the river, and at the base of the mountains was a dense belt of timber, but this obstacle once passed,

there appeared to be no great difficulty in reaching a well-marked col south of the main peak. It was Wilson's intention to reach this col from the west, and then work partly along the face of the mountain, and try to gain the summit by the southern arête. But our limited time, and the uncertainty of the weather, prevented us from making the attempt. We were due in the Yellowstone region in a few days; provisions also were running low, and game was very scarce, and we could not reckon on getting our fresh supplies for ten days.

On the 18th we crossed the Snake river and moved our camp about eight miles further north, intending to devote the afternoon to photography, but bad weather interfered with our operations. We were more successful next morning, and started again about noon, intending to recross the Snake near its exit from Jackson's lake. After passing over several well-marked old river-terraces, we got entangled in the forest near the south end of the lake, and not being able to force our way through, were obliged to retrace our steps and then make west towards the junction of the Buffalo Fork with the Snake. Unable to find a ford, we camped on the west bank of the river near some low hills, and the next morning Hayden, Jackson, and myself ascended one of these, and were rewarded by a magnificent view of the Teton range, the lake, and the whole of the Snake valley above the cañon. The most prominent object was the square-topped Mount Moran, one of the more northern peaks of these mountains, right opposite to us, beautifully reflected in the still waters of Jackson's Lake. The southern and western banks of the latter, as well as the lower slopes of the mountains beyond, were clothed with dense forest, much of it burned and fallen, and evil to ride through. To the north, on the other side of the Snake River above the lake, the mountains fell off gradually in height until finally they merged into an immense undulating plateau covered by apparently unbroken forest, which bounded the horizon. From this elevated plateau descended the Lewis's fork, or chief branch of the Snake River, heading in the Shoshone and Lewis Lakes, and running into Jackson's Lake, from which it issued a few miles from our position.

A few very small glaciers still exist on the eastern slopes of the Teton range, and I have no doubt that these were once developed on an immensely greater scale, and probably filled up the depression occupied by Jackson's Lake. To this circumstance may probably be due the diversion of the original direct course of the river, of which there is ample evidence in the old deserted river-channels and terraces, into its present tortuous and apparently unnatural channel.

After Jackson had obtained some excellent negatives, we reluctantly turned our backs on the marvellous scene. On our return to camp we found all ready for a start. Turning south-east, we found a ford across the Snake above its junction with the Buffalo fork, early in the afternoon, and camped that evening near the marshy flats on the east of Jackson's Lake. The next day we continued our journey up the river, and on the 22nd entered the forest-covered plateau, camping that night near the source of the Snake, a few miles below Lewis's Lake. We had now entered the Yellowstone region, not a day too soon, for our provisions were nearly giving out. Only about two days' full rations remained, and for four days we had seen no game. It would yet be three days before we could reach the Lower Geysir basin, and our fresh supplies would probably not arrive there for a week. That night, to make matters worse, an evil-disposed mule came into camp and ate up all that was left of Hayden's supply of flour. Next morning our breakfast, though very light, was not a cheerful meal, and the heavy-falling rain had no tendency to raise our spirits. We had a very hard day through dense forest, and it was not easy when there was no sun to keep a straight course. At one time during the day we had a momentary gleam of hope. We came all at once upon fresh mule-tracks crossing our route, and immediately jumped to the conclusion that Gannett's party must have passed by that day. We followed them a short distance and found, alas! that they were our own tracks upon which we had unwittingly doubled. At last we struck the south shore of the Shoshone Lake, and skirting this reached the Little Geysir basin at its western end. The animals were knocked up, and we were hungry; and as we rode slowly along I was anxiously seeking a solution of the problem before us—to satisfy a large appetite with slender materials. All at once mules were discovered grazing—a few seconds more, and tents came into view. We had come across Gannett's party, and that night we supped 'not wisely but too well.'

A few days later we were camped in the Upper Geysir basin on the Madison River. On August 28 Michel and I were out hunting, when at some distance we saw two men on foot coming along the river bank in the direction of our camp. We approached them, and found them to be Wilson and his hunter, Harry Yount. After the first salutations, Wilson told us that three days before they had been surprised at night, when camped on the Henry's fork, by a band of Bannack Indians, their camp fired into, their animals all captured, and,

resistance being useless in the face of heavy odds, themselves compelled to take refuge in the forest. These Indians, it appeared afterwards, were retreating from the United States troops further west, and Wilson had camped near them, entirely unaware of their unpleasant proximity. He had been obliged to cross through the forest on foot as quickly as possible to the Lower Geysir basin, where he left three of his party quite knocked up, and had pushed on up the Madison hoping to find one or both of the other parties. He brought the pleasing intelligence that the Indians were making in our direction. Fortunately we saw nothing of them, but our provision-train, which arrived the day but one after, narrowly escaped them. Wilson had fortunately got his instruments out of camp after the first attack and hid them, and on his return a few days afterwards they were recovered. The camp, however, had been thoroughly sacked.

Wilson's attempt on the Grand Teton had not been successful. He had been detained by bad weather, during which he could make no observations, and ultimately was unable to reach the actual summit, being stopped about 150 ft. below by a face of rock which he could neither get over nor turn.

Here my narrative must end. I do not propose to give a description of the Yellowstone region, the mountains of which yield in point of interest to its other wonders. The publications of the Hayden Survey have treated at length on the numerous features of general and special interest, and to these I can add nothing.

Reference has already been made to the general inferiority in elevation of the mountains of the district described to those of Colorado. Peaks of 14,000 ft. elevation and upwards are of frequent occurrence in the latter-mentioned State, whereas in Wyoming, Idaho, and Montana not one attains this altitude. But it must not be supposed from this fact that the Colorado Mountains are superior either in form or in difficulty. It is not very uncommon to be able to ride up to within 1,200 or 1,500 ft. from the summit of the higher peaks, and it is even possible in a very few cases to reach the summit in this manner.

As a general rule, to which there are not many exceptions, when the timber-line, which varies from about 11,000 ft. in Colorado to 10,000 ft. in Idaho, has been passed, the mountains of the great central chain of North America are singularly easy of ascent, and the traveller in the United States, to whom mountain difficulty is a necessity, must turn his attention to the Sierra Nevada and the Cascade Range.

THE SARACENS IN THE ALPS. By W. A. B. COOLIDGE.

[Having been requested by Mr. Wethered to examine the question of the presence of Saracens in the Saasthal on the occasion of his paper on the 'Täschhorn from the Fée Glacier' in the May number of the 'Journal,' I was led insensibly to a consideration of the presence of the Saracens in the Alps as a whole. The results of my inquiry are contained in the following pages, which, apart from the immediate point at issue, may, I trust, prove of some interest to readers of the 'Alpine Journal,' and may serve to draw attention to the very interesting, but as yet scarcely-touched subject of the history of the Alps, of which the history of Mountaineering is but a single chapter. It is believed that the greater number of the facts comprised in this paper have not yet been laid before English readers.—W. A. B. C.]

AFTER the victories of Charles Martel and Charles the Great, we are accustomed to picture to ourselves the Saracens in Western Europe as being confined to Spain and the Spanish March. The object of this paper, however, is to call attention to the deeds of a robber-band of Saracens seventy years later, who, establishing themselves in a stronghold on the coast of Provence, ravaged that province, Dauphiné, and North Italy: who pushing across the Alpine passes, spread terror in the east and west of what is now Switzerland; and who, after having long defied the united efforts of the Eastern Emperor and of the King of Italy, were finally exterminated by the courage and devotion of one man. It is proposed to sketch the main outlines of the history of this band, and incidentally to consider whether any traces of their occupation still remain in the lands which they harried.

In the year 887 or 888 A.D.,* twenty Saracens,† having set out in a small vessel from Spain, were cast by contrary winds on the coast of Provence. By a night attack they gained possession of the village of Fraxinetum (now La Garde-Freinet), and of the neighbouring region now called from them 'Montagnes des Maures.' This spot being conveniently situated not far from the Gulf of Saint Tropez, S. W. of Fréjus,

* Not in 891, in which year Pertz erroneously places it, and is followed by some later writers. (Cf. E. Dümmler, 'Ostfränkisches Reich,' ii. 318, note 53.)

† Prof. E. P. Goergens, in an interesting but not wholly accurate essay, entitled 'Der Islam in der Schweiz' (Sonntagsblatt des Bund, May 5 to June 9, 1878, Nos. 18 to 23), conjectures (p. 172) that the Fraxinetum Saracens may have been Berbers, connecting their appearance with the discontent felt by the Berbers, who were only half Arabs, at the oppressive treatment they received at the hands of the Arabs of pure and unmixed lineage.

commanding the only pass to the plains on the N., and surrounded by a dense forest of ashes, whence it derived its name, was fortified by them and converted into an impregnable stronghold, whence they could sally forth and lay waste the immediate neighbourhood. Anxious, however, to increase their strength, they despatched messengers to their Spanish home, who gave such favourable accounts of the prospects of the settlement, that a hundred Saracens were persuaded to return with them. Such was the origin, according to Liudprand, Bishop of Cremona, and trusted adviser of the Emperor Otto I., of the nest of bandits, which was destined to afflict so sorely the most fertile districts of the Western and even of the Rhaetian Alps.* Profiting by the internal dissensions of the Provençal nobles, some of whom called them in as allies, they attained the mastery over their employers, and gradually rooted them out, at the same time constantly increasing their strength by reinforcements from Spain. They became a source of terror to their neighbours, and began to undertake expeditions at a greater distance from their headquarters. It should

* ‘[Fraxinetum] mari uno ex latere cingitur, caeteris densissimâ spinarum silvâ munitur. Quam si ingressus quispiam fuerit, ita sentium curvitate tenetur, acutissimâ rectitudine perforatur, ut neque progressionis neque reditus, nisi magno cum labore, habeat facultatem.’ ‘Sed occulto et quoniam secus esse non potest justo Dei iudicio, viginti tantum Saraceni lintre parvulâ ex Hispaniâ egressi, nolentes istuc (sc. Provinciam) vento delati sunt. Qui piratae noctu egressi, villamque (sc. Fraxinetum) clam ingressi, Christicolas, pro dolor, jugulant, locumque sibi proprium vindicant, montemque Maurum villulae cohaerentem contra vicinas gentes refugium parant; spineam silvam hoc pacto majorem et spissiolem suâ pro tuitione facientes, ut si quis ex eâ vel ramum incideret, mucronis percussione hominem exiret; sicque factum est ut omnis praeter unius angustissimae viae aditus demeretur. Loci igitur asperitate confisi, vicinas gentes clam circumquaque perlustrant. Accersitum quam plures in Hispaniam nuntios dirigunt, locum laudant, vicinas gentes nichil se habere promittunt. Centum denique tantummodo secum mox Saracenos reducunt, qui veram rei hujus caperent assertionem.’ (Liudprandi Antapodosis, i. 2, 3, smaller Pertz.)

‘Circa haec tempora maxima pars Saracenorum mare navium vehiculis transfretantes, ingressi sunt Fraxinetum ad habitandum, ubi plurimos annos commorantes, inexpugnabilem reddiderunt. Erat enim circumseptus nemore perdenso, maxime silvarum plurimarum.’ (Chronicon Novaliciense, iv. 22, smaller Pertz.)

According to Reinaud, 160, note 1 (‘Invasions des Sarrasins en France, et de France en Savoie, en Piémont, et dans la Suisse.’ Paris : 1836), there are at present no more ash trees in the district.

always be borne in mind that these incursions of the Fraxinetum Saracens were not undertaken with any political aim in view, but were solely actuated by the coarser motives of pillage and robbery.* It is simply the history of Monaco, repeated on a wider scale.†

As early as 890 the Council of Valence mentions the ravages committed by the Fraxinetum Saracens.‡ The chronicle of the great abbey of Novalesse on the southern slopes of the Mont Cenis, states that the Saracens of Fraxinetum harried Burgundy, the Arelate, the neighbourhood of Nice, Italy, and all 'Subalpine Gaul.' §

This great house itself was fated soon to become the prey of the marauders. Climbing by side paths to the summit of the pass of the Mont Cenis,|| they surprised the monks, Domnivertus, the abbat, having retired to Turin on the first news of their approach, for which the chronicler severely rebukes him. The monks were driven out, but managed to convey much treasure and no less than *six thousand books* to Turin. The abbey was sacked, burnt, and long remained desolate. Two aged monks who had been left to guard the church were brutally wounded and flogged to death. A number of fugitives who had taken refuge in the monastery of Oulx were also butchered; ¶ and the robber band retired, laden with spoil.** All this took place in 906. In the same year they sacked Acqui in the Italian plain.†† But the troubles of the poor monks of Novalesse were not yet over. Not having any place wherein to deposit their treasure in Turin, they committed it to the care of Riculfus, the 'pre-

* F. Keller. 'Der Einfall der Sarazenen in die Schweiz um die Mitte des X. Jahrhunderts,' p. 6. ('Mittheilungen der antiquarischen Gesellschaft in Zürich.' Band xi. Heft i. 1856.)

† J. R. Green. 'Stray Studies,' p. 61.

‡ Léon Ménabréa. 'Des Origines féodales dans les Alpes Occidentales,' p. 31. ('Académie Royale des Sciences de Turin.' Serie 2, vol. xxii. xxiii. Turin: 1865.)

§ 'Chronicon Novaliciense,' iv. 23, 26.

|| Not the Mont Genève. Vide Oehlmann, 'Die Alpenpasse im Mittelalter,' p. 207-8. ('Jahrbuch für Schweizerische Geschichte,' vol. iii. 1878.)

¶ This spot was later called 'Campus plebis Martyrum' 'Ulcienis ecclesie chartarium,' published by Rivantella at Turin, 1753, p. x. 151. (Apud Reinaud, p. 163, note 2.)

** 'Chronicon Novaliciense,' iv. 25, 26.

†† Liudprand, 'Antapodosis,' ii. 43, who adds: 'Tantus enim timor invaserat universos, ut nullus esset, qui horum praesentiam nisi forte tutissimis prestolaretur in locis.'

positus' or steward of the bishop. But in the confusion following on the incursions of the Saracens, when Riculfus died, the monks lost most of their treasure and books, which the negligent Domniverus did not recover or reclaim.* A few years later, in 910, some Saracen prisoners, in an attempt to escape, set fire to the church, through which, as the chronicler laments, the monks lost much treasure and many charters and books, some of which were still shown in his time in a half-burnt condition.†

These successes still further increased the terror with which the Fraxinetum Saracens were regarded, and emboldened them to still more daring exploits. S. Majolus, later Abbot of Cluny, of whom we shall hear again, was forced with his parents to retire from Provence into Burgundy.‡ The Maurienne, and especially the Upper Valley of the Durance, suffered severely from the incursions of these marauders.§ In 916 the town of Embrun was sacked and burnt, and many of the inhabitants massacred, including the archbishop, S. Benedict, and also the bishop of the Maurienne, who with many fugitives had taken refuge within its walls.|| The Porte Sarrasine at Embrun still preserves the memory of this frightful catastrophe.¶ The invaders then settled themselves in Embrun,

* 'Chr. Novaliciense,' iv. 30.

† 'Chr. Novaliciense,' v. 1, 2. The manuscript here is nearly illegible, and it is impossible to recover the details of this episode.

‡ 'Acta Sanctorum' (ed. 1680), Maii, tom. ii. 659. 'Cum violenta Saracenorum manus a finibus ebuliens, Provinciam occuparet, vastaret, dirueret atque diriperet; relictis fundis qui sibi ex paterno jure numerosiores obvenerant, Matisconam (Macon) Burgundiæ civitatem advenit.' Cf. a general sketch of ravages of the Saracens, *ibid.* p. 669.

§ 'Pedestri itinere Alpes ingressi, valles et Ebrodunensem terram, Maurienam etiam cis citraque destruxerunt.'—Vit. S. Romuli Episc. Genicensis, apud Gingins-la-Sarra, ix. 121, n. 210. Cf. Flodoardi Annales sub anno 928 (Pertz, 'Monumenta Germaniæ Historica Scriptorum,' iii. 378). 'Odalricus Aquensis (sc. Aix) quidam episcopus in ecclesiâ Remensi recipitur.' In his 'Historia Remensis,' iv. 22, Flodoard gives the reason of the bishop's flight: 'qui ob persecutionem Sarracenorum a sede suâ recesserat.'

|| 'Gallia Christiana' (ed. 1656), i. 275: 'S. Benedictus (sc. Episcopus Ebrodunensis) martyrium subiit a Saracenis una cum episcopo Maurianensi in civitate Ebrodunensi et numerosâ plebe ex Segusianâ (sc. Susa) valle, Novalisiâ atque Maurianensi dioecesi transfugâ,' 916. Piolin, the editor of the new edition (1876) of the 'Gallia Christiana,' thinks the date is most probably 920. (G.C. iii. 1067.)

¶ J. C. F. Ladoucette, 'Histoire, Topographie, Antiquités, Usages,

and forced the two succeeding archbishops (elected to the see 'in partibus infidelium') to live far from their cathedral city.* Ladoucette gives a long list of names, which prove, if any further proof were wanted, the presence of the Saracens on the Upper Durance, e.g., Montmaur, Puy de Maure, Torrent du Sarrasin, Freissinières. Various towers and buildings are also attributed to them.† The name of the Valley of the Arc, the Maurienne, appears in the works of Gregory of Tours (sixth century), and must therefore have a different origin. Some of the numerous Freneys in Savoy and in Dauphiné are probably so named from the Mediterranean stronghold of this robber band. And in the tangled group of mountains between the valley of the Arc and that of the Romandie, the writer has himself visited a Combe des Sarrasins and a Col des Sarrasins (in neither case do these names appear on the French Ordnance Map), opposite which, very curiously, is the pass of the Col Lombard.‡

The Saracens were now practically the masters of the two great Alpine passes of the Mont Cenis, and the Mont Genève, though probably they did not maintain a guard on either. Hence we have frequent complaints on the part of pilgrims and travellers approaching one or the other through the Maurienne or the Valley of the Durance. In 911 the Archbishop of Narbonne, on his way to Rome, was unable to pursue his journey across the Alps.§ In 921 a large band of English pilgrims on the way to Rome were stoned to death by the Saracens in the defiles of the Alps.|| This was probably on the Great St. Bernard or on the Mont Cenis, the two passes principally frequented in the Middle Ages by the English, Norwegians, and Icelanders, journeying to the threshold of the Apostles.¶

Dialectes du Département des Hautes Alpes.' 3ème édition. Paris: 1848, p. 39.

* F. Gingins-la-Sarra. 'Mémoires pour servir à l'histoire des royaumes de Provence et de Bourgogne Jurane' (in 'Archiv für Schweizerische Geschichte'), ix. p. 122, note 212. 'Gallia Christiana,' i. 275.

† Ladoucette, pp. 44-47.

‡ Cf. Reinaud, 184, n. 1.

§ Catel, 'Mémoires de l'histoire du Languedoc,' p. 775. (Apud Reinaud, p. 164, n. 2.)

|| Flodoardi Annales (Pertz, 'Monumenta Germaniae Historica,' iii. 369). 'Anglorum Romam proficiscentium plurimi inter angustias Alpium lapidibus a Sarracenis sunt obruti.'

¶ Oehlmann, 209, n. 5, quotes an interesting passage from Gervase of Canterbury: (English pilgrims are in the habit of going 'apud Ivoricam (? Ivrea) et castrum Toringum (? Turin), quas ingredientibus

In 923 another band of English pilgrims were massacred by the Saracens on their way.* In 929 we read that the Saracens held the Alpine passes, so that many intending to visit Rome were forced to turn back.†

The kings and nobles in the west seem either to have been paralysed with fear at these daring incursions, or were too much divided among themselves to be able to resist their common foe. Curiously enough the first attempt to exterminate the nest of marauders at Fraxinetum, was made by the Greeks of the Eastern Empire, who had suffered much in Southern Italy from Saracens, though possibly not the Fraxinetum Saracens. In 931, so Flodoard tells us, a Greek fleet, perhaps in pursuit of some Saracen ships which had been engaged in piratical enterprises, sailed to Fraxinetum, surprised, and probably by means of the terrible 'Greek fire,' destroyed many of them, and established order in Italy.‡

It is clear, however, that this victory is exaggerated, for a few lines lower, Flodoard tells us that Robert II., Archbishop of Tours, and all his company were slain by robbers (though it is not expressly said that these were Saracens), who surprised them in their Alpine encampment, as they were returning from Rome.§ The same authority continues the sad tale of the occupation of the Alpine passes by the Saracens, and of other ravages committed by them.||

Longobardiam primo occurrunt. Ivorica, via quae venit de Monte Jovis : Toringum, via quae venit de valle Marianâ.' As to the pilgrimages of the Icelanders to Rome, see Oehlmann's remarks, pp. 259-267, which afford much curious information.

* Flodoard (Pertz, iii. 373): 'Multitudo Anglorum limina Sancti Petri orationis gratiâ petentium inter Alpes a Sarracenis trucidatur.'

† Flodoard (Pertz, iii. 378): 'Viae alpium a Sarracenis obsessae, a quibus multi Romam proficisci volentes impediti revertuntur.' Cf. Liudprand, 'Antapodosis,' ii. 44. 'Nemo etiam ab occasu sive ab arcturo orationis gratia ad beatissimorum apostolorum limina Romam transire poterat, qui ab his (sc. Sarracenis) aut non caperetur aut non modico dato pretio dimitteretur.'

‡ Flodoard (Pertz, iii. 379): 'Graeci Sarracenos per mare insequentes Fraxinetum saltum ubi erat refugium ipsorum, et unde egredientes Italiam sedulis praedabantur incursibus, Alpius etiam occupatis, celeri, Deo propitio, internecione proterunt, quietam reddentes Alpius Italiam.'

§ Flodoard (Pertz, iii. 379): 'Robertus, episcopus Turonensis, Româ remeans sub Alpius noctu infra tentoria cum comitatibus secum interimitur a latronibus.'

|| Flodoard (Pertz, iii. 381) 933: 'Sarraceni meatus Alpius occupant, et vicina quaeque loca depraedantur.'

Up to this time there is no room for dispute. The pillaging of the Saracens had been hitherto confined to Provence, Dauphiné, North Italy, and the Alpine passes. We now come to the discussion of a point, which, though in the opinion of the writer capable of being well-established by authentic documents, yet has excited some controversy. Mr. Freshfield, in his 'Note on the Saracens,' in the May number of this Journal, inclines to the opposite view to that which the present writer has adopted after careful consideration. The question is as to the presence of the Saracens in what is now Eastern Switzerland.

Under date of 936, Flodoard of Reims, whom we have often cited above, and who is distinguished by the exactness and trustworthiness of his statements,* sets down in his 'Annals' (Pertz, iii. 383), 'Sarraceni in Alamanniam praedatum pergunt, et revertentes multos Romam petentes interimunt.' By 'Alamannia' it is generally agreed that the diocese of Cur and the Upper Valley of the Rhine is to be understood.† Nothing could be plainer than this simple statement. It is, however, a fair question by what route the Saracens reached these distant regions. We must admit at once that we have no evidence bearing directly on this point. They cannot have taken the route across the Great St. Bernard, up the Rhone Valley, and over the Furca and Oberalp passes to the Vorder Rhein Thal, because we only hear later of their having crossed the S. Bernard, and we have no narrative of the plundering of the great abbey of Dissentis, which would certainly have taken place had the Saracens passed near it.‡ It is on the whole more probable that they passed on the south side of the main chain of the Alps, either through the plains of North Italy,§ or keeping close to the southern slopes of the Alps.|| Keller's doubt is due to the fact that he could not find any traces of the sack by the Saracens of the numerous towns which lay along their route. There are, however, two passages, which raise a presumption that the marauders *may* have taken this route. The first occurs in Liudprand, and tells us

* Wattenbach, in his invaluable work, 'Deutschlands Geschichtsquellen,' 4th ed., 1877, i. p. 330, praises the fulness of his narratives and notes, especially his 'fleckelose Wahrheitsliebe und Zuverlässigkeit.'

† Oehlmann, 211. Keller, 8. Dümmler, 'Otto der Grosse' (Leipzig: 1876), p. 114. Conradin von Moor, 'Geschichte von Curraetien' (Cur. 1870), 192.

‡ Oehlmann, 212. Keller, 9.

§ So Keller doubtfully, p. 9.

|| So Oehlmann, 213.

how, in 936, a large number of the Fraxinetum Saracens attacked Acqui (which they had already sacked in 906), and were utterly cut to pieces.* The interest of this lies in the fact that we here find Saracens from Fraxinetum in the Italian plains in the same year in which they are said to have harried Alamannia. The other passage comes from the 'Chronicon Novaliciense.' † The author of the chronicle says that an uncle of his, who was a soldier, was one day hastening to the town of Vercelli, having heard of the approach of the Saracens, though they were believed to be still far off. But passing through a wood he was set upon by them and with his servant and his companions and team of oxen was made captive. It so happened that about the same time his brother passed by on his way to the bishop, and seeing the servant bound together with one of the oxen, he learnt on inquiry that his relative had been carried off by some Saracen scouts; on which he returned to the town, and, making a collection among his friends and relatives, ransomed his brother.‡ We may take this event as a specimen of what must often have occurred.

These two cases may, in the absence of direct evidence, justify us in assuming that the Saracens passed through the Italian plain on their way to Alamannia. If so, they probably reached Cur by the Septimer or the Bernardino, the old Roman roads over which were much frequented in the Middle Ages.§

The scanty documents relating to the presence of Saracens in Alamannia, or what is now the Canton of Graubünden, furnish few details of their doings in that region: but that they really did come there and commit depredations

* Liudprand, 'Antapodosis,' iv. 4: 'Dum haec aguntur (sc., the war between Hugh of Provence, titular King of Italy, and Alberic, Patrician of Rome), Saraceni Fraxinetum inhabitantes, collectâ multitudine, Aquas, L miliaris Papia distans, usque pervenerant. Horum *πρωβωλος*, (provolos), id est predux, Sagittus, Saracenus pessimus impiusque extiterat. Deo tamen propitio, pugna commissa *ταλέπορος* (taleporos), id est miser, ipse cum omnibus suis interiit.' Dümmler, the editor of 'Liudprand,' in Pertz's smaller collection seems to connect this attack on Acqui with the raid of the Saracens into Alamannia, as he refers in a note to Flodoard, sub anno 936, where this is the only mention of the Saracens.

† 'Chronicon Novaliciense,' v. 9.

‡ Oehlmann, page 212, dates this soon after 961, without giving his authority. There is no date in the Chronicle itself.

§ As to the fact that Saracen names are frequently found in the neighbourhood of Roman roads, see Keller, p. 9, note 8.

may be established beyond dispute. There is a document still extant, dated August 8, 940, by which Otto the Great, the future Emperor, at the request of Herman, Duke of Alamannia, grants two churches to Bishop Waldo, of Cur, for his life, the bishop 'conquerens nobis suum episcopium continuâ depredatione Sarracenorum valde esse desolatum.*' In 952 Otto crossed the Alps, probably by the Septimer, and could see for himself the districts wasted by the Saracens. Another charter granted by Otto, and bearing date December 28, 955, makes over to Bishop Hartpert, of Cur, at the prayer of Otto's brother, Bruno, Archbishop of Cologne, a great number of churches, 'ad aliqua ejusdem infortunia recuperanda, quia loca ad eandem ecclesiam pertinentia ab Italiâ redeundo invasione Sarracenorum destructa ipsi experimento didicimus, ipsiusque ecclesiae paupertati compatiendo votumque in ipsâ peractum solvendo.'† Here we have the evidence of Otto himself as to the ravages of the Saracens, who probably did not dare to attack him and his large retinue on their journey in 952, or on his passages of the Septimer in 965, and Bernardino in 966. These documents prove beyond possibility of contradiction that the Saracens did appear in the diocese of Cur, probably in consequence of the treaty of 942 with Hugh, King of Italy, of which we shall shortly speak, though their route thither cannot be clearly made out. That they also extended their raids to the great monastery of St. Gallen is clear from Ekkehart's (IV.) account‡ of the successful attack made by Dean Walto in 954, on a band of Saracens, who coming 'e parte australi,' had fallen upon the Alpine pasturages belonging to the monastery. It must be allowed that Ekkehart is not always accurate or trustworthy; but in

* Von Mohr, 'Codex Diplomaticus Raetiae,' i. 66 (No. 44). Keller, p. 12, quotes another charter of Otto, as granting in 953 various lands to Bishop Hartpert as a compensation for losses at the hands of the Saracens. But in the original document (v. Mohr, i. 73, No. 51) there is no mention of the ravages of Saracens, nor are the lands restored for any similar reason. Many other grants were made by Otto to the see of Cur or to Bishop Hartpert, and it may be conjectured that they had something to do with the incursions of the Saracens.

† Von Mohr, *ibid.* i. 74 (No. 52). This passage is repeated word for word in the confirmation of this gift by Otto at Constanz, Aug. 28, 972 (v. Mohr, i. 91, No. 64).

‡ Ekkeharti (IV.) 'Casus Sancti Galli,' in Goldast's 'Alamannicarum Rerum Scriptores aliquot vetusti' (Frankfurt, 1606) p. 99, or in the new edition prepared for the Historical Society of St. Gallen, by E. Meyer von Knonau (S. Gallen, 1877), pp. 408-11.

this case local tradition may be presumed to have preserved the fact of the Saracen incursion, though the details may be a later addition. Ekkehart relates this as merely a specimen of what the monastery suffered at the hands of these freebooters, for he adds, 'si miseriam omnem, quam *nostrates* a Saracenis sunt passi percurrerem volumen efficerem.' Two touches in his narrative deserve mention, as they help to explain the rapidity with which the Saracens moved. He speaks of them as men, 'quorum natura est in montibus plurimum valere,' and says that they roamed through ('percurrebant') the mountains 'capris (sc. chamois) fugatores.' The chief modern historian of St. Gallen, Arx, states that the Saracens plundered Sargans, the Toggenberg, and Appenzell, but without citing his authorities.* In the life of St. Majolus, Abbot of Cluny, written by his successor St. Odilo, we find the following passage in a description of the ravages of the Saracens: 'crudelissima Sarracenorum ingens multitudo . . . ad terminos usque Italiae atque Provinciae pervenit . . . urbes, vicos, villasque depopulans, et sic per *Alpes Julias usque ad juga Penninarum Alpinum*, rapido cursu pervenit.' †

From these accounts of the Saracens in the east of modern Switzerland, it will be seen that they came thither solely for purposes of plunder, and not to settle. Hence we should not expect to find many traces of them in local nomenclature or tradition. The present writer cannot lay claim to either a sufficiently intimate acquaintance with these districts, or such a knowledge of philology as would enable him to enter into an examination of possible Saracenic traces in names of places. For these reasons, and because he conceives that the presence of the Saracens in Eastern Switzerland has been abundantly proved from authentic written documents, it will suffice to mention but one instance of a local name, which seems to be connected with the Saracens. That name is Pontresina. In three documents of 1139 we read of property situated 'ad pontem Sarisinam.' In another of 1244 'Tobias de Ponte Zarisino' appears. In others, dated 1291 and 1296 occurs the name of 'Casparus de Ponte Sarraceno.' The same authority ‡ whence these items are taken, mentions a massive tower still standing near Pontresina, which probably served to guard the

* I. v. Arx, 'Geschichte des Cantons S. Gallen (1810),' i. 226 (apud Keller, p. 13, note 20).

† 'Acta Sanctorum,' ed. 1680; Maii, tom. ii. p. 689.

‡ J. H. Hotz, in 'Anzeiger für Schweizerische Geschichte und Alterthumskunde,' 1856, p. 10.

bridge, and which is attributed by local tradition to the Saracens. This derivation is, however, rejected by the late Z. Pallioppi, of Celerina, a local antiquarian, and by Mr. F. S. Reilly (the translator of Dr. Ludwig's Guide to Pontresina), who refer the name to a Rhaetian or old Cymric root; and Mr. Reilly goes so far as to doubt the existence of a bridge there in the Middle Ages, but Herr Hotz expressly mentions that a shield is still to be seen on several houses in the place, in which a bridge is clearly distinguishable, and adds that the family of 'Sarraz,' which still flourishes there, is popularly said to descend from the Saracens.

But however it may be with these philological considerations, the evidence cited above in proof of the Saracens in eastern Switzerland is clear and convincing. An attempt has been made by some writers, among others by Mr. Freshfield in his 'Note,' p. 210, to discredit this evidence by suggesting that it may be possible that the Magyars or Hungarians and Saracens may have been confounded under the common appellation of 'Saraceni,' a term which was used very loosely in the Middle Ages. No doubt the ethnology of the mediaeval writers is wanting in precision and exactness. Flodoard, however, mentions the 'Ungari' repeatedly, and always quite apart from the Saracens (Ann. 919, 922, 924, 926, 927, 933, 934, 937, 951, 954, 955), and in fact never mentions any but the Fraxinetum Saracens, according to the index to Pertz's edition. Ekkehart (cap. 51) describes in great detail the Magyar attack on his own monastery in 926, quite independently of his narrative of Dean Walto and the Saracens, in 954. He sets them in the strongest opposition when telling the story of Conrad of Burgundy, and his stratagem to rid himself of both his enemies (cap. 65), to which we shall refer later on. Finally he states very clearly his own opinion on the subject: 'qui Ungros Agarenos putant, longâ viâ errant' (cap. 82). The same view of the distinction between the two is found also in a gloss on Orosius: * 'Ungri, quos longè a vero lapsi idiotæ nostri quidam nunc Agarenos vocant, sed et scribunt.' Even if the name 'Saraceni' is taken as a generic name for marauder, its occurrence in Eastern Switzerland would go far to prove that Saracens were the chief marauders of the district.†

* Dümmler, Ekkehart, p. 19 (in Haupt's 'Zeitschrift für Deutsches Alterthum,' Neue Folge, Band ii.) The 'Annales Sangallenses Majores' (formerly called 'Annales Hepidanni'), however, constantly use the two names as synonymous.

† The passage cited by Mr. Freshfield from Theobald's 'Das Bund-

The general conclusion, then, as to the presence of Saracens in Eastern Switzerland, at which the writer has arrived, is that it can be established as an historical fact by authentic documents, in which special pains are taken to distinguish the true Saracens and the Hungarians from each other.

Reverting to our main subject after this long digression, we come to another passage of Flodoard, which again records the destruction by the Saracens of a band of pilgrims bound to Rome in 939.* This may apply to the Rhaetian passes, or may be connected with the important event recorded in the following year, 940, viz. the sacking and burning of the great abbey of St. Maurice, in the Rhone valley, then one of the most famous houses in Christendom, by the Saracens, who for that purpose must have crossed the Great St. Bernard, this being the first mention of their ravages on the north side of the central chain of the Pennine Alps.† Flodoard tells us that a band of pilgrims, English and French, could not cross the Alps, as the

ner Oberland' (p. 89) is based on a misconception. In 926 the Hungarians attacked St. Gallen (Ekkehart, cap. 51, sqq.), and in the same year Bishop Waldo of Cur got a charter from Henry I. conferring on him for his life certain lands and possessions, possibly to make up for the damage inflicted on his diocese by Hungarian freebooters. (Von Mohr, i. 61, No. 41.) Planta, 'Das alte Raetien,' 402. Gelpke, 'Kirchengeschichte der Schweiz,' ii. 482. In 940 Bishop Waldo received certain churches from Otto I. in consideration of the ravages of the Saracens (vide supra). Theobald thus has made a mistake in the date of the Hungarian raid, and assumes a special plundering of the abbey of Dissentis, which is not mentioned by the original authorities, though Bishop Waldo was also abbat of that house (Gelpke, ii. 480.) Cf. in general Von Moor, 'Geschichte von Curraetien,' 190. It may be noted that all the archives and manuscripts of the abbey of Dissentis perished when it was burnt by the French, May 6, 1799, and this may explain the rarity of early documents relating to that district (V. Moor, 'Geschichte von Curraetien,' 1322). It may be added that the great fight on the Lechfeld took place in 955, and *not* before 940, as Theobald assumes.

* Flodoard, ann. 939 (Pertz, iii. 386): 'Collecta diversorum hominum quae Romam petebat a Sarracenis pervasa et interempta est.' Cf. sub ann. 936: 'S. in Alamanniam pergunt et revertentes multos Romam petentes interimunt.'

† Flodoard, ann. 940 (Pertz, iii. 388): 'Collecta Transmarinorum sed et Gallorum, quae Romam petebat, revertitur, occisis eorum nonnullis a Sarracenis, nec potuit Alpes transire propter Sarracenos, qui vicum monasterii Sancti Mauricii occupaverant.' Ekkehart, cap. 65, alludes to this event. It is remarked by Goergens (pp. 148, 179) that the name by which the entire chain of the Alps was known to the Arabs was simply a corruption of 'Mons Jovis,' viz., 'Mont Dschaus,' to

Saracens had 'occupied' the monastery of St. Maurice; and St. Ulrich, bishop of Augsburg, on his visit in 940, found that it had been 'recently' burnt, and that there was but a solitary monk left in charge of the ruins.* A letter has been preserved, addressed by the abbat, Rudolf II., to King Lewis from-beyond-Sea (Louis d'Outremer), enumerating the gifts heaped on the abbey by the king's predecessors, and beseeching him to restore to its original splendour the great house which had been so cruelly used by the barbarians.†

But by this time the harryings of this band had stirred up Hugh of Provence, the titular king of Italy, to make an attempt to expel them from their strongholds. In 941 he sent an embassy to Constantinople to request the emperor Romanos I. to furnish him with the celebrated Greek fire, and with some 'chelandia,' in order that these might blockade Fraxinetum by sea, and cut off all reinforcements from Spain, whilst the king himself would assail them from the other side by land.‡ This the emperor agreed to do, on the condition that Hugh married one of his daughters to Romanos, grandson of the emperor, and son of Constantine Porphyrogenitus, an arrangement which was carried out by the marriage of Bertha, Hugh's illegitimate daughter.§ Meanwhile Hugh had come to terms with Alberic, the Patrician of Rome, and husband of his only legitimate daughter Alda.||

which, in ignorance of the meaning of 'mont,' was often prefixed the Arabic equivalent 'dschebel.' This fact tends to show that their occupation of the Great St. Bernard must have been more important than would appear from the contemporary authorities, and that this portion of the range of the Alps was by far the best known to them.

* Gerhardi, 'S. Oudalrici Vita,' (Pertz, iv. 404), c. 15: (S. Oudalricus) 'Monasterium (sc. S. Mauricii) noviter a Saracenis exustum invenit, et nullum de habitantibus ibi conspexit nisi unum aedis aedilem combustum monasterium custodientem.'

† 'Gallia Christiana,' xii. 793: 'Nostra ecclesia, quae cumulus (forte tumulus) sanctorum martyrum est, cum universis aedificiis ad eam pertinentibus per manus barbarorum ita in cineres redacta est, ut etiam muri ex magnâ parte corruerint. Ad sanctorum igitur sepulcra restauranda et ornanda, sicut regiae congruit pietati, totis misericordiae visceribus affluatis, de vestrà mammonâ amicos vobis sanctos martyres faciatis, ut ab ipsis in aeterna tabernacula recipi valeatis.' This letter is supposed to have been written the same year as the sack of the abbey.

‡ Liudprand, 'Antapodosis,' v. 9. Gingins-la-Sarra explains 'chelandia' as meaning 'bateaux plats,' Archiv, ix. 200.

§ Liudprand, 'Antapodosis,' v. 14.

|| Flodoard, ann. 942. Cf. Gingins-la-Sarra, Archiv, ix. 200.

In accordance with these arrangements, in 942 Hugh led his army in person towards Fraxinetum, whither the Greek ships had sailed. The Greek fire soon destroyed all the vessels of the Saracens: the king attacked Fraxinetum itself, and forced the Saracens to take refuge in the range of hills, now known as the Montagne des Maures, immediately overhanging their fortress. He then surrounded them, and would without doubt have completely exterminated them, and thus saved the Alpine districts from great distress, if he had not had reason to believe that his rival for the crown of Italy, Berengar, Marquis of Ivrea, who had fled to the court of Otto I. in 941,* had at last succeeded in procuring an army from him in order to enforce his claims. For this reason Hugh resigned the splendid prize which was within his grasp, dismissed his Greek allies, and concluded a treaty with the Saracens, who could never have expected such favourable terms, 'hâc ratione, ut in montibus qui Sueviam atque Italiam dividunt, starent,' his object being 'ut si forte Berengarius exercitum ducere vellet, transire eum omnibus modis prohiberent.'† Suevia is probably used here to mean 'High Germany' generally; and the result of the treaty was thus to hand over the legal possession of all the Alpine

* According to Liudprand, v. 10, Berengar fled over the Great St. Bernard in 941, to Duke Hermann of Swabia, and his wife Willa, who was far advanced in pregnancy, over the Bernardino in the depth of winter, to join him. Liudprand, v. 11, has some furious verses upbraiding the mountains with having allowed Berengar to pass them, though they were so fatal to all holy men who approached them, and served as a refuge for those bloodthirsty robbers the Moors. To which ever of the two passes this may refer, it is an instructive passage, as Liudprand does *not* mention elsewhere the Saracens on the Mons Jovis (Great St. Bernard), or on the Mons Avium (Bernardino).

† Liudprand, 'Antapodosis,' v. 16: 'Rex itaque Hugo, congregato exercitu, classibus per Tirrenum mare ad Fraxinetum directis, terrestri ipse eò itinere pergit. Quo dum Greci pervenirent, igne projecto Sarracenorum naves mox omnes exurunt' (Flodoard, ann. 942; Pertz, iii. 389: 'Idem vero rex Hugo Sarracenos de Fraxineto eorum munitione disperdere conabatur'). Sed et rex Fraxinetum ingressus, Sarracenos omnes in Montem Maurum fugere compulsi; in quo eos circumsedendo capere posset, si res hæc, quam prompturus sum, non impediret. 17. Rex Hugo Berengarium, ne collectis ex Franciâ et ex Sueviâ copiis super se irrueret regnumque sibi auferret, maxime timuit. Unde non bono accepto consilio, Græcos ad propria mox remisit; ipseque cum Sarracenis hæc ratione foedus iniit, κ. τ. λ.; cf. Gingsins-la-Sarra's commentary, 'Archiv,' ix. 203. The treaty was so far successful that Berengar was not able to regain Italy till 945 or 946, and then only by the long roundabout route by Landeck and Trent (Liudprand, v. 26). Cf. Dümmler, 'Otto der Grosse,' p. 138.

passes to the freebooters, who had so narrowly escaped utter ruin. Liudprand bursts out into lamentations over this shameful treaty, and compares Hugh disadvantageously with Herod.* The crossing of the St. Bernard in 940, and this treaty of 942, mark the highest point of the power and daring of the band of freebooters, the fortunes of which we have traced out in this paper. They now held the passes by a lawful title, and though the eastern were less closely guarded than the western, it is clear that it was no light matter to cross them, both from the various authorities cited above, and because Berengar did not succeed in recrossing the Alps till 945, and then only by a long *détour* by Landeck and Trent, though on his flight in 941 he had traversed the Great St. Bernard, seemingly without being molested. It was no doubt in consequence of the treaty of 942 that the harryings in eastern Switzerland took place, which we find referred to in the second charter granted by Otto I. to the see of Cur. Their unlooked-for deliverance seems to have led them to resume their plundering with renewed zeal.

The see of Maurienne was frequently overrun, especially in the year 943.† Grenoble in 954 had been ‘*diu*’ occupied by them,‡ and Bishop Isarn was compelled to transfer his residence to St. Donat, between Vienne and Valence.§ Nice and the country around was repeatedly wasted as well as the coast up to Genoa.||

We may mention here a marvellous tale related by Ekkehart concerning King Conrad of Transjurane Burgundy, who,

* Liudprand, ‘*Antapodosis*,’ v. 17 : ‘*Eò (sc. in montibus) constituti quam multos Christianorum ad beatorum apostolorum Petri et Pauli limine transeuntium sanguinem fuderint, ille solus scit numerus qui eorum nomina scripta tenet in libro viventium. Quam inique tibi rex Hugo regnum defendere conaris! Herodes, ne terreno regno privaretur, innocentes multos occidit; tu ut obtineas, nocentes et morte dignos dimittis.*’

† ‘*Gallia Christiana*,’ iii. 1067–68.

‡ Reinaud, 181, n. 1, gives an inscription on a tower built at St. Donat by Bishop Isarn, which is dated 954, and runs thus :

‘*Per Mauros habitanda diu Granopolis ista (al. esset),
Lipsana sanctorum præsul aborbe tollit (al. præsul cavere habet).*’

§ This comes out clearly in a dispute between St. Hugh, Bishop of Grenoble, and Guy, Archbishop of Vienna in 1094, as to the possession of the priory of St. Donat, where the bishop was admitted to have lived during the occupation of Grenoble by the Saracens; but the point in dispute was whether he was a fugitive in another diocese, or whether the priory belonged to his see. Reinaud, 199, n. 1.

|| Reinaud, 180.

when the Saracens and Hungarians poured into his land, persuaded the Saracens to attack the Hungarians on his behalf, and the Hungarians to assail the Saracens on the same ground; and, when a great massacre had taken place, came down with his own army on the survivors, slew many, and sold the rest into captivity at Arles.* That the Hungarians on their return from a freebooting expedition passed through Burgundy is well known; but Ekkehart's story is rejected by the best authorities as bearing marks of a later origin.† If there be any fragment of truth in it, the event must have taken place between 937, the year of Conrad's accession, and 954, the last time they are recorded to have overrun Burgundy.‡ Even if a legend, it clearly shows that Saracens and Hungarians were clearly distinguished from one another in popular belief. In 951, Flodoard mentions for the last time an attack by the Saracens on pilgrims crossing the Alps, and these were treated in a milder way than earlier bands, probably because of the treaty of 942, and were allowed to pursue their journey on paying a toll.§ In connection with this new aspect of the character of these bandits, we may mention a confused statement of Ekkehart (cap. 65) that they settled ('conseederant') in a certain valley, 'paceque petitâ uxores filias gentis ducunt: vallem maximae ubertatis parvis regi reeditibus datis incolunt.' Keller (p. 14) conjectures that this valley may have been the Valais or the Val d'Abondance in Savoy; Furrer || that it was the Val de Bagnes. The fact that some of the marauders settled down and married native wives is of importance with reference

* Ekkehart, cap. 65; Flodoard, ann. 954, says that Conrad made a treaty with Hungarians, after pillaging in northern districts of modern France: 'Burgundiam intrant, quorum non parva manus tam praeliis quam morbis interiiit; ceteri per Italiam revertuntur in sua.' The 'Ann. Einsiedlenses,' ann. 954 (Pertz, iii. 142) merely state, 'Ungari per Noricos et Francos in Italiam.'

† Dümmler, 'Otto der Grosse,' 235. G. Meyer von Knonau in his edition of Ekkehart, note 821.

‡ Ekkehart, note 821. There is no ground for believing the battle to have been fought near Neuchâtel. This erroneous notion is probably derived from Johannes von Müller's statement ('Die Geschichten schweizerischer Eidgenossenschaft,' ed. Leipzig, 1825, i. 251) that the king's mother with a bishop (probably St. Ulrich of Augsburg) fled for refuge from the invaders to a solitary tower near the site of the present Neuchâtel.

§ Flodoard, ann. 951 (Pertz, iii. 401): 'Sarraceni meatum Alpium obsidentes, a viatoribus Romam petentibus tributum accipiunt et sic eos transire permittunt.'

|| 'Geschichte von Wallis,' ii. 143 (Sitten, 1854).

to the question (to be discussed later on) of Saracens in the Saasthal. That, however, the Saracens were still troublesome we see from the sending of John, a monk of the abbey of Gorze, to Abderrhaman III., Khalif of Cordova, as an ambassador from Otto I. John reached Cordova in 953, but, his credentials being understood to contain reflections on the religion of Islam, was not admitted to an audience of the Khalif. The Khalif sent Recemund, Bishop of Elvira,* to Otto, and he succeeded in inducing Otto to order John of Gorze to suppress the obnoxious expressions; and John was received by the Khalif in July 956. One of the principal objects of his mission was that he ‘amicitiam pacemque de infestatione latrunculorum Saracenorum quoquo pacto conficiat.’† The result of this mission is not known; but that the Saracens were becoming weaker appears from several incidents, which show also an increasing desire on the part of the natives to rid themselves of their troublesome visitors. We find in 960 Bishop Giso of Aosta putting forth certain regulations as to tolls on all traders and merchants crossing the Great St. Bernard. Yet, as we shall see very shortly, the St. Bernard was the scene of the last act of brigandage of the Saracens in the Alps; while, on the other hand, the list of articles taxed shows that the stream of traffic across the pass was beginning to revive.‡

In 965 Bishop Isarn of Grenoble appealed to the nobles and

* ‘Vita Joh. Gorz.,’ cap. 130, in Mabillon’s ‘Acta Sanctorum ordinis Sancti Benedicti,’ Saec. v. p. 404 *sqq.*; cf. Dümmler, ‘Otto der Grosse,’ p. 279. Reinaud (pp. 187–193) gives a high-flown and not quite accurate account of the proceedings. As to the continued connection of the Fraxinetum Saracens with Spain see Liudprand, i. 3, and v. 9, ‘ne ab Hispaniâ victus eis (sc. Saracenis) aut copiarum subsidia provenirent.’

† It is a curious fact that it was to this dignitary that Liudprand dedicated his ‘Antapodosis’ (written 958 to 962): ‘Reverendo totiusque sanctitatis pleno, domno Recemundo, Liberritanae (sc. Illiberitanae) ecclesiae episcopo’ (i. 1). He says that the bishop, whom he addresses as ‘carissime pater,’ stirred him up to write this work, but that he put off beginning it ‘biennio,’ so that it was very probably on occasion of this visit to the court of Otto that Recemund induced Liudprand to write this his chief historical work. He apologises for describing the position of Fraxinetum thus: ‘Cujus (sc. Fraxineti) ut cernentis liquido pateat situs, quemadmodum temet latere minime reor, immo melius scire, sicut ab ipsis qui vestri sunt tributarii regis, Abderahmem scilicet, potestis conjicere, κ. ρ. λ. (i. 2).

‡ Besson, ‘Mémoires du diocèse de Genève,’ p. 473 (apud Oehlmann, p. 248, n. 4). Reinaud, p. 195, wrongly assumes that from this time the St. Bernard was entirely cleared of Saracens.

people, and succeeded in freeing his cathedral city from the infidels, in honour of which he began to build the present cathedral church. The reconquered lands were divided among the victors, and certain noble families of Dauphiné, such as the Mont Eynards, are said to have owed their wealth to this crusade on a small scale.*

Liudprand has preserved to us a curious incident, which he places in 963. He states that King Adalbert, son of Berengar, titular King of Italy, alarmed at the conduct of the emperor, abandoned Italy and joined himself to the Saracens at Fraxinetum.†

On January 18, 968, the Emperor Otto I. addressed a letter to the chief nobles of Saxony from Capua, stating his intention, if the ambassadors from the Eastern Emperor, who were then expected at his court, offered suitable terms, of that summer going to Fraxinetum to destroy the Saracens on his way home.‡ But having been long delayed by the war with the Greeks in South Italy, and hearing of the death of his mother, his son, and some of his chief nobles, he resolved to hurry home in April 972, and gave up the idea of the expedition against Fraxinetum.§

We now come to the last and crowning achievement of this band of robbers, which, though probably their most successful exploit, yet raised such a storm of indignation against them that their stronghold was finally broken up and the neighbouring districts freed from their savage harrying. We refer to the capture in 973 of St. Majolus, the abbat of Cluny, and his companions on descending from the Great St. Bernard to the

* Reinaud, 198; cf. charter, quoted in note 1 of p. 199 ('Notum sit . . . quod post destructionem paganorum, Isarnus episcopus aedificavit ecclesiam Gratianopolitanam'), and another charter, quoted from Chorier ('Estat politique de la province du Dauphiné,' ii. 377), by which Isarnus grants certain lands to Rodolf, head of the house of Eynard, as a reward for his valour.

† Liudprand, 'Gesta Ottonis,' cap. 4: 'Adeo enim eundem Adelbertum, ecclesiarum dei ejusdemque papae Johannis persecutorem, imperator sanctus terruerat, ut, omnem Italiam deserens, Fraxinetum adiret seque Sarracenorum fidei commendaret.' Ibid. cap. 7: 'Adelbertus . . . a Fraxineto rediens.'

‡ Widukindi 'Res Gestae Saxonicae,' cap. 70 (continuatio): 'Si vero voluntati nostrae (nuntii Constantinopolitani regis) paruerint, ut praesenti aestate . . . per Fraxanetum ad destruendos Sarracenos, Deo comite, iter arripiemus et sic ad vos, disponimus.'

§ Widukind, cap. 75: 'Igitur imperator, auditâ morte matris et filii, caeterorumque principalium virorum . . . judicavit ab expeditione Fraxaneti abstinere, et dispositis in Italiâ rebus, patriam remeare.'

plains.* St. Majolus, as we have before noted, had been forced in his youth to fly with his parents from his home in Provence to Burgundy. In 970 he crossed the Alps safely by way of Cur on his way to Rome. Having long tarried in the capital of Christendom, he was moved by his fervent desire to see his monks again to start on his journey homewards. Perhaps encouraged by letters from Bishop Giso of Aosta, he chose the Great St. Bernard as the most convenient route to Cluny. Having overcome with great labour all the natural difficulties of the pass, his party descended on July 22, 973 † (twenty-four days before the feast of the Assumption), to the little plain at the junction of the two Dranses, on which the village of Pons Ursariae (or Ursarii), or Orsières, ‡ is built. They had crossed the stream, and were beginning to descend the narrow zigzag path which would lead them down to Martigny, when they were suddenly set upon by the Saracens, who had been lurking behind the rocks near the path. Many of the travellers, who had come with St. Majolus thinking that there would be safety in numbers and in the company of so holy a man, took to flight, but were hotly pursued, captured, and manacled. St. Majolus could easily have escaped, but this his anxiety for

* The following narrative is constructed out of the three lives of St. Majolus (by Nalgodus, one of his disciples, by Syrus and Aldebaldu, and by St. Odilo, his successor at Cluny) printed in the 'Acta Sanctorum,' ed. 1680; Maii, tom. ii. pp. 657-690. Some incidents, specially noted, come from Rodolfus Glaber (Pertz, iv.).

† Reinaud, 205, and Oehlmann, 222, wrongly date it 972; Ladoucette, p. 42, in 974. See Dümmler, 'Otto der Grosse,' 485, note 1, and Keller, 15, note 23.

‡ Nalgodus, in his life of St. Majolus (loc. citat., p. 663) expressly says that the event took place on the 'Mons Jovinus,' that is, the Mons Jovis, or Great St. Bernard. Reinaud, 201, and Ladoucette, 42, maintain that St. Majolus crossed the Mont Genève to the valley of the Durance, and then the Col d'Orcières to the valley of the Drac; Pons Ursariae being the Pont du Fossé in the gorge of Orcières, and the Drancus the Drac. But there seems to be no documentary authority in support of this theory. Ladoucette mentions a mound with ruins still called 'Château Sarrasin,' near the mouth of the gorge of Orcières, above Ricoux, and another hard by, known as the 'Champ des Morts,' where broken weapons and crucifixes are said to have been dug up several times; and in the neighbouring village of St. Laurent du Cros there is a quarter called St. Mayol (or St. Mayoou), and a legend that the messenger sent to convey the ransom to St. Majolus rested there on his way. Opposite the Château Sarrasin there is a bridge called Pont de Mailloou or Mayoou, the construction of which is attributed to the Saracens (cf. Ladoucette, 640-649).

and sympathy with his fellow-travellers would not allow him to do. The robbers, returning from the pursuit in high spirits, found him sitting on a stone by the wayside praying that none of his companions might perish, and immediately put him in chains and carried him off to a dungeon cut out of the living rock, though not before he had had time to save one of his companions from receiving a sword-stroke, by himself stopping the blow, and being grievously wounded thereby. But, as his biographer remarks, his good act did not go unrewarded, for the wound was healed at once, though he ever after had a scar on his hand. He tried in vain to soften the hard hearts of his captors by preaching to them the Gospel of Christ; but they only mocked and jeered at him the more, though a few are said to have been impressed with his words.

Two incidents of his captivity are preserved by Rodulfus Glaber (= Calvus), i. 4 (Pertz vii. 54-5). One day for breakfast he was offered the same fare as the Saracens, 'carnes panemque admodum asperum,' but declined it on the very different grounds that God would feed him, and that he had never been used to such coarse food. One of the Saracens, inspired with respect for him, washed his hands and proceeded to prepare some dough on his shield, 'satis mundissime,' which he baked and offered to the holy man, who accepted it and consumed it, after saying grace.

On another occasion, one of the band, engaged in shaping a bit of wood with his knife, placed his foot upon a copy of the Scriptures which the saint was accustomed to carry about with him. Majolus, on seeing this act, heaved a deep sigh, on which some other Saracens severely rebuked their companion for treading under foot the writings of great prophets. It is added that later in the same day the offender irritated his comrades in some way, so that they fell upon him and cut off his foot, which Rodulfus Glaber considers a judgment of God on him. But the abbat's faith was not shaken. When his captors had taken away all his books from him, he found under his cloak a copy of St. Jerome on the Assumption of the Virgin,* the reading of which greatly cheered him. Finding that it was only twenty-four days before the feast of the Assumption, he prayed earnestly that he might celebrate it among Christians, and his prayer was heard. Wearied with the fatigues of the day, he then fell asleep. That night there appeared to him a vision of

* This probably alludes to a treatise—'De ortu et nativitate Virginis,' formerly attributed to St. Jerome, but now believed of much later origin. ('Acta Sanctorum,' loc. citat., p. 666.)

the pope in his pontifical robes, holding a censer filled with burning incense, which he took as a sign of his speedy deliverance. Again while asleep his chains were miraculously unfastened, awe-struck by which wonder the Saracens contented themselves with guarding him, and treated him in a more courteous fashion. On being questioned as to what property he possessed, he replied that he possessed nothing of his own, nor did he wish to own anything, but he allowed that many of those under his jurisdiction were very wealthy. The brigands then settled on a ransom of one thousand pounds of silver, 'ut videlicet singulis libra una in partem perveniret,* and allowed him to send by one of his monks taken with him a letter to Cluny, which ran as follows:—'To the officers and brethren of Cluny, Majolus, the unfortunate prisoner in bonds. The pains of hell have come upon me: the snares of death have overtaken me. If it be your will, send a ransom for me and for those who have been taken with me.' The receipt of this letter caused great grief at Cluny, though they rejoiced at the thought that he had not been brutally put to death, and might still be restored to them by payment of a ransom. The required sum was got together with great difficulty by selling the ornaments and even the ordinary utensils belonging to the abbey, to which were added gifts from pious men. Several of the older monks then journeyed to the place of captivity, and had the joy of setting their beloved abbat and his companions at liberty, the Saracens returning to Fraxinetum ('propria cubilia') 'per consueta devia.'† He was received with every mark of respect and affection on his arrival at Cluny, where, according to his prayer, he was able to celebrate the feast of the Assumption among his beloved brothers. It is added that when the Saracens were overtaken and defeated, and the booty divided, the books belonging to the saint were found and were set apart for him.

This daring act of violence excited the greatest consternation throughout Christendom, and we hear of several local risings against the Saracens before the final attack on their stronghold. Such, for instance, were the expulsion of the in-

* Rodulfus Glaber, i. 4. (Pertz, vii. 54.) The ransom would amount to about 700,000 francs (28,000*l.*) current value, taking the pound at 700 francs (Reinaud, 203, n. 1). It is curious that this is the only occasion, save in the case of their first attack on Fraxinetum, on which any information is given by our authorities as to the number of the Saracen marauders.

† Life by Syrus and Aldebaldus, p. 680.

vaders from the environs of Sisteron by Bobo,* and from Gap by a certain chief named William,† perhaps the same as the Count of Provence next to be spoken of.‡

It was in 975 that William I., Count of Provence, destroyed the robber-nest of Fraxinetum. In conjunction with Ardoin, marquess of Ivrea, he took the fortress by storm and put all the garrison to the sword, not sparing a single man. All honour to brave Count William, who dared to face and succeeded in crushing so formidable a foe,§ thus sweeping from the face of the earth a band of brigands, who had inflicted incalculable damage on the inhabitants of the Alps for a space of nearly ninety years, who had successfully resisted the attacks of an Eastern Emperor and of a King of Italy, and who had determined the mighty Otto the Great, the second restorer of the empire, to come against them in person.

With this feat of arms of Count William may perhaps be connected the story that a certain Fraxinetum Saracen named Aimo, having quarrelled with his comrades about the division of some booty, came to Rotbald to betray them, and led Count Rotbaldus thither, so that he was able to destroy them all.¶ It does not seem to have been remarked before that this Rotbald was the brother and successor of William, Count of Provence, and himself held as his share of the paternal inheritance the

* 'Acta Sanctorum,' ed. 1680; Maii, tom v. 185. Cf. Ladoucette, 45. Reinaud, 205-6. There is much that is fabulous in the account, and the narrative of the extermination of the Saracens at Fraxinetum by S. Bobo is utterly untrustworthy. (Dümmler, 'Otto der Grosse,' 485, n. 1.)

† Bouche, 'Histoire de Provence,' ii. 44. (Apud Reinaud, 206-7.)

‡ Reinaud, 207. Ladoucette, 43.

§ 'Acta Sanctorum,' ed. 1680; Maii, tom ii. 689-690. (S. Majoli Vita ab St. Odilone scripta. According to Dümmler, 485 n. 1, the passage also occurs word for word in Odilonis Vit. S. Syri apud Mabilon.—Acta, Saec. V., 779.) 'Dominus . . . per Wilelmum, illustrissimum virum et Christianissimum principem, meritis beati Majoli, jugum Sarracenorum ab humeris Christianorum deposuit, et multa terrarum spatia, ab eis injusti possessa, ab eorum tyrannicâ dominatione potenti virtute eripuit.' Rodulfus Glaber, i. 4 (Pertz, vii. 55.) 'Ipsique denique Sarraceni paulo post in loco qui Fraxinetus dicitur circumacti ab exercitu Wilelmi Arelatensis ducis, omnesque in brevi perierunt, ut ne unus quidem rediret in patriam.' William's real title was Count of Provence. (Cf. Dümmler, 485, n. 1. 'L'Art de vérifier les dates,' ed. 1818, vol. x. 39.) The Grimaldi, now Princes of Monaco, are said to derive their wealth from lands given to an ancestor by Count William as a reward for his services against the Saracens. (Reinaud, 209.)

¶ 'Chronicon Novaliciense,' v. 18.

county of Forcalquier, of which he was the first count *eo nomine*.*

An incident is preserved to us, which brings together the two chief actors in the closing scene of the domination of the Saracens in the Alps, viz., the death of William of Provence in 992, in the arms of S. Majolus, who invested him with the monastic habit before his death, according to the usual practice.†

But though we hear no more of Fraxinetum, all traces of the Saracens in the Alps did not disappear, but may still be distinguished, especially in local names, at the present day.

It is a plausible conjecture that the false gods and demons with whom St. Bernard of Menthon had to contend when establishing his hospice (980) on the Mons Jovis, which was later called after him, may be none other than the Saracens posted on that frequented route.‡ However that may be, there still exists in the church of Bourg St. Pierre, at the foot of the Grand St. Bernard, an inscription engraved on a stone, which since the rebuilding of the church in 1739 has served as the doorstep, a barbarism which has resulted in the almost entire destruction of the words. It records the erection of this church by Hugh, bishop of Geneva (1019–1038), an illegitimate son of Rudolf III., king of Transjurane Burgundy, at a time when the Saracens had ‘long’ been wasting the fertile Rhone valley.§

* ‘L’Art de vérifier les dates,’ x. 395. Cf. Reinaud, 182. Oehlmann, 224.

† ‘L’Art de vérifier les dates,’ x. 395.

‡ Keller, 15, n. 23; Oehlmann, 220, who state it as a generally received theory, and as ‘almost beyond doubt.’ A ‘Vie de S. Bernard de Menthon par un chanoine du Grd. S. Bernard,’ Paris, 1862 (sold at the Hospice), suggests (p. 63) that the brigands, whether Mohammedans, Jews, or recreant Christians, set up some form of demon worship in the ruins of the old Roman temple of Jupiter, and that it is to this that St. Bernard’s struggle with the demons refers.

§ The text of the inscription given by Sebastian Briguet in his ‘Vallesia Christiana’ (Seduni, 1744) and amended in the last line by Keller 19, is as follows:—

‘Ismaelita cohors Rhodani cum sparsa per agros,
 Igne, fame, et ferro saeviret tempore longo,
 Vertit in hanc vallem Poeninam Messio falcem
 Hug. Praesul Genevae Xpti post ductus amor,
 Struxerat hoc templum Petri sub honore sacratum;
 Omnipotens illi reddat mercede perenni,
 In VI decima domus haec dicata Kalenda
 Solis in Octobrem cum fit descensio mensem.’

The third line may be interpreted as belonging to the first lines, and

Traces of the Saracens abound in the upper valley of the Durance in Dauphiné, and have been carefully collected by Ladoucette in his most interesting and valuable work.* Among others, he notes that at the end of the tenth century the Dévoluy (so called from 'devolutum,' because when the forests were cut down the fertile soil was carried down the sides of the hills by heavy rains and the melting of the snow), a desolate district to the south-west of the great range of the Dauphiné Alps, was almost entirely peopled by Saracens.† We are thus led to the question, in attempting to answer which this paper had its origin, of the alleged presence of the Saracens in the Saas valley.

It may be admitted at once that the evidence in favour of this theory is scanty and not based on any direct evidence. In short it is a probable conjecture and not an ascertained fact. We have seen above that the Saracens first crossed the St. Bernard in 940 and that they did not finally disappear from that neighbourhood till 973. We have drawn attention to the treaty of 942, by which the passes between 'Suevia' and Italy were committed to the charge of the Saracens, which they seem to have well fulfilled, judging from the case of Berengar. And finally we have noted the passages in Ekkehart, in which he speaks of the Saracens marrying daughters of the land and settling in a fertile valley, for which they paid a small rent to the King of Burgundy.‡ Now these are all general statements, and we have no written evidence of their settling in any one valley. Under these circumstances, it is permissible to recur to other sources of information, such as etymology of local names; and, though there are great temptations to forced interpretation of names to suit a preconceived theory, the writer is convinced that there is a strong presumption, based on etymological grounds, that the Saracens did occupy the valley of Saas,§ in the Valais, and have

referring to Saracen harryings, or connected with the fourth line, and explained with reference to the spread of Christianity in this valley.

* Ladoucette 39-48, 202, 369, 417, 580, 606, 608-9.

† Ladoucette, p. 559.

‡ Ekkehart, cap. 65, 'pace petitâ (Sarraceni) uxores filias gentis ducunt; vallem maximæ ubertatis parvis redivibus regi datis incolunt.' That Ekkehart's statements must be received with caution has been already observed.

§ The statements of Schiner ('Description du Département du Sim-
plon,' Sion, 1812, pp. 267-269), quoted by Mr. Freshfield, are mere conjectures. The terms of the sale (1300 A.D.) of the 'alpe Mundmar,' by Count Jocelin Blandrate, to the 'Gemeinde of Saas,' do not bear out Mr. Freshfield's supposition that it was a mere pasture valley.

left traces of their presence in many local names in that district. This theory seems to have been first stated by C. M. Engelhardt,* was elaborated by Keller in the work to which we have so often referred, and is supported by Goergens.† The two former writers agree in deriving 'Almagell' from Arabic words (al mahall), meaning 'the watch post,' for which its position commanding the routes to the Antrona Pass and the Monte Moro would admirably qualify it. Goergens derives it from 'al maschal' (= the battle), and explains it as the 'battle-field.' While maintaining strongly that all these Saasthal names are of Arabic origin (and he is himself a distinguished Arabic scholar), he considers it difficult to determine at the present time their precise original signification (p. 162). So, too, 'Alalain' is interpreted as meaning 'above the spring,' i.e., the height on which the spring takes its rise; the Eien Alp is similarly the Alp near the spring or stream. 'Mischabel' has been explained in several ways. Engelhardt regards the original form as having been 'Misch dscheb' meaning the 'triple-peaked' mountain. Keller, on the authority of Prof. Hitzig, suggests a rather fanciful interpretation, viz., 'the lioness with her young ones.' Goergens states that the Arabic root 'schibel' besides meaning 'young lion' has the general signification of 'wild animal,' and he accordingly interprets Mischabel as 'a region haunted by wild animals.'‡ Engelhardt thinks that Balferin or Balfrain means 'the mountain with two springs.' But the village of Balen at its foot would, in my opinion, probably account better for this name. Distel and Alphubel seem to me of purely Teutonic origin. The writer is entirely unacquainted with Arabic or any of the cognate tongues, and is thus unable to offer any authoritative criticism of these interpretations. It may, however, be stated that the opinion of both the Arabic professors at Oxford is in favour of the Arabic origin of the local names in the Saasthal enumerated. Mr. Gandell, the Laudian Professor of Arabic, who speaks with authority on Semitic matters, writes: 'I have looked again at the local names you have sent me and I must say that *all* have *distinct* proofs in them of Arabic—I mean to say such evidence as is not to be controverted.' Mr. Nicholl, the

* In 'Natureschilderungen,' p. 116, and 'Das Monte Rosa und Matterhorn-Gebirg,' pp. 127-134.

† 'Sonntagsblatt des Bund,' 1878, p. 162.

‡ Loc. cit., p. 162. The local derivation from 'misch-gabel' (a mixing fork, or pitchfork) is untrustworthy and philologically improbable.

Lord Almoner's Professor of Arabic, suggests certain conjectural derivations of these local names, which it might be difficult to sustain; but he is equally clear that the names are of Arabic origin, and can be explained in no other way.

Apart from any details, it cannot fail to strike every intelligent reader that the fact of the existence of so many names in one Alpine valley which can be explained from the Arabic, is a strong proof that Arabic influences have not been wanting there; and this is rendered in the highest degree probable when we find that the Saracens beyond a doubt did many times between 940 and 973 appear in the neighbouring main valleys. In no other valley have local names yielded similar results, and there is thus but one conclusion, which, though far from being certain, is yet very probable.

Besides those names which are probably reminiscences of the occupation of the valley by the Saracens, we find the Pizzo del Moro, south of Banio, in the Val Anzasca (very near the Saas valley), and the Cima del Moro, between the Val Anzasca and the Val Antrona; compare the Mont Mort (as it is now written) near the Great St. Bernard, where the Saracens certainly maintained a garrison for many years. Above all there is the Monte Moro itself, the only easily accessible pass over the main range of the Alps between the St. Bernard and the Simplon. It has been conjectured that it owes its name to Ludovico Sforza, surnamed *Il Moro* (from his device—a mulberry tree), who crossed it in (?) 1449;* or that the word is derived from the Celtic word 'mor,' meaning great, though it is not a high peak, but a pass.† It is much more natural, however, to interpret it with reference to the Saracens or Moors,‡ who may very probably have occupied it under the treaty of 942. It is true, no doubt, that it is not mentioned by any 'tenth century chroniclers,' who are fewer in number and not so given to mention the minor passes over the Alps as Mr. Freshfield in his 'Note,' p. 211, seems to assume. Engelhardt thought that he had found traces of a Roman road across it.§ In a document of Aug. 16, 1291, concerning disputes between the men of Saas and Zermatt on one side, and those of Val Anzasca and Macugnaga on the other, special provision is made that either party should have the right of passing through the ter-

* Engelhardt, p. 131. The date must be wrong, as Ludovico il Moro was only born in 1451. Perhaps it should be 1499.

† Albrecht Schott, 'Die Deutschen Colonien in Piedmont,' (Stuttgart und Tübingen, 1842), p. 62.

‡ So Goergens, 162. Keller, 21.

§ P. 63.

ritory belonging to the other, and that the Val Anzasca people should use their own 'alpes' without being molested by the men of Visp. All this points to frequent intercourse over the mountains, though the names of the passes are not mentioned. It is probable that the Monte Moro, as the easiest pass, would be the most frequented.* Herr P. I. Zerbruggen, of Saas, who held a benefice at Padua, in a MS. history of Saas, states in a passage cited by Venetz,† that as early as 1440 the Monte Moro and Antrona Pass are mentioned as 'uralte Pässe,' a very strong expression. On the other hand it cannot be denied that the name by which we first heard of the pass is 'Mons Martis' or 'Magganaberg' (? Macugnaberg).‡

An isolated name will not prove anything by itself; a number of names of similar origin occurring together, leaves a strong presumption which can be confirmed or refuted by the existence or absence of evidence as to the presence of the race in question in the immediate neighbourhood. It is the cumulative evidence which is of weight in the case of the Saracens at Saas.

Mr. Freshfield suggests that some of the 'Mors' have to do with the root which lurks in 'moor, morass, marsh,' and says just before, 'one guess is surely as good as another, and perhaps better.' The writer concurs with him entirely in both points; but as Mr. Freshfield seems to suppose that the advocates of the survival of traces of Saracens in the Alps are bound to refer *every* 'mar,' 'mor,' or 'mur,' to Moorish origin, the writer may fairly claim that Mr. Freshfield should defend his supposition by a similar extension of the discussion. If he can do this, he will do much to settle the question at issue.

* 'Mémoires de la Société d'histoire de la Suisse Romande,' vol. xxx. pp. 425-429.

† In his 'Mémoire sur les variations de la température dans les Alpes de la Suisse, redigé en 1821' (published in 'Denkschriften der allg. Schweizerischen Gesellschaft für die gesammten Naturwissenschaften,' i. 2, Zürich, 1833), apud Schott. l. citat., p. 63. As to Zerbruggen or Zurbrücken's MS. history, see Engelhardt's 'Monte Rosa' (p. 20, note), who had it for some time in his hands. The author had made extracts from more than 100 (not 300) documents.

‡ In a document of 1300, by which the 'Gemeinde' of Saas buys the high pastures in the valley from Count Jocelin Blandrate, we read of the 'alpe Mundmar,' which Zerbruggen says should properly be 'Mont Mar,' and which is now 'Matmark' (Engelhardt, 131). Stumpf's Chronik (Zürich, 1606), p. 659. J. Simler, 'Descriptio Vallesiae' (Lugd. Batav. ex officinâ Elzevirianâ [1633]), p. 55, who is copied by Scheuchzer, 'Itinera Alpina' (Lugd. Batav. 1723), p. 303.

With all due deference, it may be pointed out, the derivation of Alalain from 'à la lei' assumes that the inhabitants of the Saas valley were French-speaking, or at least used a modern French preposition, whereas it was distinctly within the limits of the Teutonic Upper Wallis, or even if it be allowed that an earlier Celtic population existed there (*of which there is absolutely no evidence whatever*), it is not generally believed that the Celtic language was so nearly identical with modern French.

The conclusion then to which the writer has come is, that there is a strong probability, both from what we know of the history of the neighbouring districts, and from the evidence afforded by local names, that the Saracens did settle in the Saas valley, and formed a possibly not inconsiderable portion of the population. More than this it is impossible to say; such evidence as there is, is in favour of this theory, and Mr. Freshfield has, in the opinion of the writer, failed entirely to rebut it or to establish an opposite theory on any solid grounds.

Finally, the positions which the writer has taken up, and which he conceives himself to have established by historical evidence, may be summed up thus:—

1. That the Saracens, starting from their stronghold at Fraxinetum, committed great depredations in the Alps between 888 and 975.

2. That they penetrated as far as Rhaetia (Cur. S. Gallen), which they ravaged repeatedly.

3. That there is an *à priori* probability, grounded on historical evidence, supported by etymological evidence, and not contradicted by any distinct facts, that the Saracens occupied the Saas valley, either as settlers or as marauders.

Such then, are the results of the investigations of the writer as to this very interesting but little known and obscure episode in Alpine history in the Early Middle Ages. We have traced the doings of a set of marauders from their first attack on and occupation of a vantage post to their final expulsion and destruction. It is, perhaps, not often that the story of one band can be told so completely from contemporary authorities; but the writer is convinced that much that is new and valuable for the history of the Alps might be discovered by carefully going through old documents and bringing scattered notices together.* Anyone who is specially interested in, or

* One example may be given. In documents contained in Zurler's 'Urkunden für die Geschichte der Stadt Bern' (1854) or in the

has a minute acquaintance with, the topography of any Alpine district may do much in this way, as local knowledge is of the highest importance in this matter. He ventures to hope that the preceding sketch may be considered to have contributed in some small degree to the advancement of so good a cause, and that it may encourage others to take up the subject and work it out more fully.

THE SARACENS AT SAAS. By the EDITOR.

THE readers of the 'Alpine Journal' will, I am sure, be grateful to Mr. Coolidge for the very interesting and almost exhaustive paper he has contributed on a subject which, though of special interest to Alpine travellers, has hitherto (in England, at any rate) been treated only in a fragmentary and incomplete manner.

Of the three conclusions Mr. Coolidge seeks to establish, the first I imagine to be undisputed and indisputable. For the second, Mr. Coolidge has been able to produce what appears to me to be convincing historical evidence of the visits of Saracenic marauders to Eastern Switzerland, evidence which no longer leaves in my mind any room for the doubts which, without an intimate knowledge of the original authorities, it seemed to me reasonable to entertain and express.

With respect to Mr. Coolidge's third conclusion, however, with the best will in the world to believe in a colonisation which would add a new interest to one of the noblest of the northern valleys of the Alps, I must confess that I remain unconvinced, and that, if anything, I am rather hardened in my scepticism by the failure of so competent an advocate either to bring forward any new evidence, or materially to strengthen the old evidence. Mr. Coolidge is far too fair and cautious as an historian to allege that this evidence amounts to proof. The difference between us, fairly stated, amounts to this: that the conjecture as to the settlement of the Saaethal which he considers the most probable of any, I look on as possible, but, as far as we yet know, highly improbable.

'Fontes Rerum Bernensium' (vol. ii. 1877), we find repeated mention of the Lower Grindelwald glacier, in 1146, 1220, 1273. In 1246 and 1247 both glaciers are mentioned, and the alp between them, 'qui dicitur Metenburch;' in 1252, 'mons qui dicitur Scheitecca.' In 1180 we hear that the church at Grindelwald had formerly been built of wood, but had now been rebuilt of stone. Similar instances may be multiplied without end.

It is, I think, universally admitted that the story of a settlement of Saracens at Saas was set going (probably by Engelhardt) through the impression made by the name Monte Moro on a mind prepared by a perusal of Reinaud's work to entertain a belief in the 'à priori probability' of such an occurrence. The next stage in the construction of the theory was to examine the local nomenclature for traces of Arabic—that is, with a predisposition to find such traces. Apart from this 'à priori probability' (which I will advert to again), the direct evidence as it now stands is, in fact, this name Monte Moro, and the assumed Arabic character of three or four other names in the district. Now, as to the Alpine names in 'mar,' 'mor' and 'mur,' I am quite ready to give one or two derivations for each and every one of them which shall be at least as plausible as the 'Moor' derivation. But I shall certainly not give in every case the same. With regard to Monte Moro itself, it appears, as Mr. Coolidge allows, first in history as Mons Martis and Muntmar, and it seems to me, therefore, of all the Alpine 'Moros' the one for which it is most difficult to claim any Moorish connection.

With regard to the argument from traces of Arabic words in the local nomenclature, Mr. Coolidge talks of its 'cumulative' force. But his heap is surely rapidly falling to pieces under his eyes. He himself eliminates Alphubel, Distel and, it would seem, Balferin. We are left, then, with a heap composed of three—Allalin, Alalein, or Alalain,* Almagell, and Mischabel. Now, when I find in the Zermatt valley a Lei See, and elsewhere in the Alps Val de Lei, Surlei, Allée Blanche, Allée Noire, Pigne de l'Allée, Alain, Aléfroide, I conceive myself bound to see if I cannot trace some connection between these names, or some of them, and to exhaust the chances of likely European tongues, Celtic or Romance, before I go to Arabic for an explanation. I do not pretend to any knowledge of the niceties of philology, nor am I skilled in applying what Gibbon calls 'the tortures of etymology,' but I am open to suggestions from any likely quarter, and they are not wanting. Mons. Durier tells me there is a Celtic word 'lei,' an enclosed pasture. We find 'Combe' in the Alps as well as at home. Why not Lei too? Again, in our own country we have the Scotch 'Allan' and the Cornish 'Alan,' words which Mr. Taylor tells us mean 'the white water,' a most appropriate name. There is another possible explanation of the name,

* 'Allalin' in the Federal Map. But, according to Engelhardt, 'Alalain' represents the local pronunciation.

the simplest of all, which certainly deserves full consideration. 'Lai' and 'Lei' are common Romance forms of 'lacus.*' The addition of a final *n* is usual enough, as in the neighbouring Egginerhorn, in old books simply the Egge.† Alalain may be simply 'at the lake,' as Surlei, in the Engadine, is 'above the lake.' Will any competent witness come forward and tell us Alalain cannot be derived from any of these sources?

Almagell, or rather its old form, *Almengall*, will lend itself to many derivations, German or Italian, and many have been suggested for it. It does not seem to me so clear how it can be deduced from 'al mahall' or 'al maschal.' I am not prepared to endorse *Mist-* or *Misch-gabel*, plausible as they sound in some ways, particularly when compared to the 'abode of the whelps,' or the 'lioness and her cubs,' of the Arabic professors. And here I must add that what is philologically improbable must depend on how far local pronunciation has been correctly reproduced in the written name. The Federal engineers did their work so well that one would not willingly find faults in it. But in rendering local names they had some sleepy moments; witness *Dent d'Hérens* for *Dent de Rong*, and *Zardezan* for *Cià del Cian*.‡ Murray's 'Handbook' states, I know not on what authority, or with what truth, that *Mischabel* is locally pronounced *Mi-gebel*. There is a *Gebelhorn* and *Thal* near the *Simplon*. *Mittel-Giebel* (the middle gable) would be appropriate, and, as a mere guess, may be offered.

The whole *Saasthal* heap has now been examined §—not, it is true, the whole heap as presented by the professors, to whose authority we are at the last referred. One of them believes that *Distel* is 'clearly an Arabic name, and can be explained in no other way.' The rest differ widely in their interpretations, and have not apparently taken any pains to be sure of the most ancient forms of the words they are dealing with, or of the history of the district they come from. With all respect I cannot but feel that their evidence has more than the usual weakness of the evidence of experts, and is entirely unfit to decide the question at issue.

Next as to 'historical evidence.' *None* has been brought

* See Swiss Ordnance Map *passim*.

† Engelhardt, 'Monte Rosa,' p. 21.

‡ This may not improbably be derived from 'Gias del Ciamp' (the châlet of the pasturage), a name which occurs in the undecayed form in the Maritime Alps.

§ I do not think any philologist will care to dwell on such names as *Calasca* and *Ceppe Morelli* in *Val Anzasca*.

forward of the presence, much less settlement, of Saracens either at Saas or in any other part of Ober Wallis. The 'Vallis maximæ ubertatis' of Ekkehard, if he is trustworthy in this instance, cannot have been the Saasthal; the description is too inappropriate. Of good documentary evidence, such as Mr. Coolidge has been so successful in procuring for Eastern Switzerland, there is here apparently an utter lack. The 'à priori probability' seems, therefore, to be really nothing more than what arises from the fact of the convention of 842 and the marauding excursions of Saracens in the Western Alps and Graubünden which followed it, coupled with the existence of 'minor passes' into the Saasthal.* An 'à priori not-impossibility' would be, I think, the phrase nearest the truth. Moreover, if the etymological evidence is of any weight at all, it is as proving a *settlement*. No marauding bands could have affixed for ever names to peaks scarcely visible, certainly far from conspicuous, from the main track down the valley. This important point has hitherto been passed by.

I have now said something of the 'à priori probability,' the 'historical evidence' and 'etymological evidence' advanced by Mr. Coolidge. There remains only his phrase, 'not contradicted by any distinct fact.' This I cannot admit. The most prominent fact in the case, as it strikes me, is that no local evidence from the appearance of the people, their speech, buildings, mode of life, ancient traditions or records, though the latter were carefully collected by a man of intelligence, and inspected by Engelhardt himself, has yet been produced to support the theory of a Saracenic settlement. Any presumption there might be in its favour is, to use Mr. Coolidge's own words, 'refuted by the absence of evidence of the presence of the race in question in the immediate neighbourhood.' It is not altogether impossible such evidence may still be found. At any rate, I will do my best to promote a careful enquiry on the spot by a competent observer, and thus to settle the question once for all. If what, to my regret, still seems to me but a pretty fancy should turn out an historical fact, I shall be the first to congratulate Mr. Coolidge on the triumph of his

* I must add here a piece of evidence telling in favour of Mr. Coolidge, but which I came too late to give him. Simler, in his 'Descriptio Vallesis' (1533), states that the 'frequentiora itinera' in the time of Julius Cæsar were the 'Mons Bernardi, Martis, Sempronius, Griessius.' This somewhat weakens my deduction, drawn from the silence as to the Moro of the five or six ninth-century chroniclers cited by Mr. Coolidge as to the unimportance of the Saas passes in ancient times.

faith and industry. But for the present I must continue to hold that there is nothing whatever in the local nomenclature of the Saasthal which the position of the valley on the frontier, between a Romance- and German-speaking population, who at one time, as proved by historical documents, were joint possessors of it, does not fully account for, and that the supposition of a Saracenic settlement there is at once superfluous and improbable.

What was the origin, and what were the limits, of the non-Teutonic inhabitants of Valais, are questions beside the main issue. But in commenting on one of the suggested derivations of Alalain Mr. Coolidge has touched on this separate question, and in so doing has laid down one or two propositions, which are in no way borne out by the books I have consulted. In the first place he says that 'the Saas valley was distinctly within the limits of the Teutonic Upper Wallis.' I believe it to have been on the W. (as well as on the S.), on the frontier between the German and Romance districts. The other Vispthal was undoubtedly originally Romance. Zermatt was first known as Praborgne, St. Niklaus as Chauson,* corrupted afterwards into Gasen, whence the whole valley was anciently called the Gasenthal, a name still surviving in Gasenried. Engelhardt, who states these facts, adds that the Augstbord Pass shows signs of more common use in ancient times, as if it had been a route for intercommunication between the upper valleys, and alleges that the houses and churches of the Vispthal resemble those of the non-Teutonic parts of the Canton.

It cannot, I think, be disputed that the same race which now prevails in the Val d'Anniviers and Val d'Hérens once prevailed also in the Zermatt valley. That this race was of Celtic origin is, if not universally allowed, at least held by many excellent authorities.† But I do not care to press an argument for the Celtic origin of names, which the intimate connection of the Saasthal with the Italian valleys sufficiently explains.

I have still, I find, some notes to add on matters of detail. The sale of 1300 A.D. was a sale by the local lord of all his rights, not in the 'upper pastures,' but in the whole valley. The sale is expressed to include all above the Martinswald;

* Engelhardt's 'Natuerschilderungen,' p. 157.

† See Engelhardt's 'Natuerschilderungen,' p. 115; Simler's 'Hist. Vallesixæ,' p. 77. It is curious that Arrian (cited p. 138 *supra*) should compare in height Elburz and the 'Celtic Alps.'

and the Martinswaldbrücke below Balen, of Engelhardt is identical with the Mattwaldbrücke of modern guidebooks — a warning to etymologists.

On one or two minor points I do not follow Mr. Coolidge. The passage cited (p. 263) from St. Odilo, if it is worth anything, seems to me to prove that in the writer's opinion the Saracens only got as far as (*usque ad*) the frontiers of Italy and 'the Province,' and to the Pennine Alps, not beyond. The mention of the 'Juliae Alpes,' 'through' which the Saracens came, proves nothing, for we find that some early writers identified the 'Juliae Alpes' of a passage in Livy with the Cottian Alps.* Again, the argument on p. 279, that 'Moro' cannot be derived from Mor = great, because the Moro is 'not a high peak but a pass,' appears unsound. Like must be compared with like. Chamonix guides speak of the Col du Géant as 'le grand col,' though it is not an aiguille. The Moro would be 'the great pass' to wanderers approaching it over the southern spurs of the main chain.

Dr. Ludwig, of Pontresina, informs me that Pontersin is found in a document of 1338, and Puntarsina in later documents. Herr Pallioppi considered these forms, pointing to the very acceptable derivation 'High Bridge,' more trustworthy indications than the Latin forms 'ad Pontem Sarisinam' (1139), and 'De Ponte Sarraceno' (1296). In Latin documents, he adds, local names are often strangely deformed.

It has not yet been noticed in this discussion that Mr. Wills speaks of the people of Fée as different in type from the other inhabitants of the valley. I do not think the characteristics he describes are Arabic, and I am not at all sure that they are Celtic.†

P.S.—Since the preceding papers were in type, an interesting article has appeared in the 'Jahrbuch' of the Swiss Alpine Club on 'The Saracens and Hungarians in the Alps,' by Dr. Düby of Bern. It goes over much the same ground as Mr. Coolidge; but, so far as the Saracens are concerned, seems to me to add nothing to his information, except a strange attempt to identify the Acqui of Liutprand, 40 or 50 miles from Pavia, with Bormio!

Dr. Düby believes in the Arabic origin of the Saasthal nomenclature,

* Simler, 'De Alp. Com.' p. 273.

† The natives are to all appearance totally distinct from those of the valley of Saas and the adjacent districts. The men are more manly and independent, the women finer and more shapely and good-looking than any in the neighbourhood. Their short faces, small noses, white teeth, determined air, good-humoured mouth, full cheeks, blue eyes, and light hair make them easily distinguishable from the natives of any other valley in the district.—Wills's 'Wanderings,' p. 123.

and sees in the 'wonderful names' of the Saasgrat peaks a proof that the wanderers had not lost their 'oriental imagination.' As he refers to the Eien Alp as Arabic, I may add that there is another Alp of the same name at Zermatt. Like most writers on the subject, Dr. Düby takes no notice of the thirteenth century documents quoted by Mr. Coolidge, which show us the men of the Vallis Solzæ (Saas), Zauxon (St. Niklaus), and Prato Borno (Zermatt), on the one side, making a treaty (A.D. 1291) with the men of Macugnaga and Val Anzasca on the other, or of the earlier deed by which in 1250 Peter de Castello granted to Count Godfrey Blandrati certain men in Val Anzasca, with leave to transport them into the Vispthal. Gingins la Sarraz ('Archiv für Schweizerische Geschichte,' ii. 21, note), considers the names Vinelet, Almagell, Randa, and Saas, to have come from this colonisation.

ASCENT OF SIKARAM, ONE OF THE PEAKS OF THE SUFFAID KOH RANGE, AFGHANISTAN.

The following note has been received from Mr. W. Simpson, F.R.G.S., and a member of the Club :—

Suffaid Sung, Gundumuck, June 1, 1879.

'Sikaram, the supposed highest peak of the Suffaid Koh Range, has been reached. Mr. George B. Scott, of the Indian Survey Department, has the honour of being the first European to accomplish this feat. He came back to camp last night, and he has given me a few details which I think will be worthy of a place in the 'Alpine Journal.' Suffaid Koh means the 'White Mountain'—that is, the Persian; in Puchtoo it is Spiu Ghar—these words having the same meaning, *Spin* being white, and *Ghar* a mountain. This range separates the Jellalabad Valley from the Kurrum Valley, and it runs very nearly east and west. The first sight I got of the Suffaid Koh was from the hills at Daka, that was at the end of November last, and at that date there was very little snow on them to justify the title of Suffaid, or 'White.' It was not till January that the snow began to come down, and all through February and March it fell heavily, whitening at times the lower ranges far down towards the plains. We had very little rain in the Jellalabad valley during the winter, indeed we had nothing worthy of the name of a shower till the 1st of March, yet often we could see heavy clouds over the Suffaid Koh, and when they cleared off, the range was evidently whiter from the extra fall which it had received. Up to the present this mountain range has been a magnificent sight along the southern side of the Jellalabad valley. From our camp there we could see the glittering peaks extending from near Pesh Bolak on the east to away beyond Gundumuck on the west.

On the old and very uncertain maps of the past there was a peak, named 'Sikaram.' While we were at Jellalabad the officers on the Survey Department could get no information about this mountain; no one seemed to be familiar either with the peak or with its name. Some began to think that the correct name ought to be Sitaram; * a word

* From Rama and Sita, the hero and heroine of the Ramayana.

which the people of this region use in reference to anything Buddhist or Hindoo. This idea acquired force from the fact that many of the geographical names yet retained belong to the pre-Mahomedan period. The 'Ram Koon'd mountain, north of Kabool, being a case in point; the Hindoo Koosh being a still more forcible illustration. The Jellalabad region is now known as Nungnahar, a corruption of Nagarahara, the old Buddhist name of the locality. Mr. Scott considers that he has set this point at rest. I think they were Ghilzais who accompanied him in the ascent, and according to these people, Sikaram comes from Sayid Karram, a holy man who lived in the time of the Prophet, and when Mahomed got one of his teeth knocked out in a battle with the Jews, Sayid Karram took out all his own teeth, and offered them to replace the loss. There is a difficulty in explaining how this holy man could have been killed on the Suffaid Koh, when there were no Mahomedans here till at least a couple of centuries afterwards. Be this as it may, Mr. Scott saw his 'ziaret' or tomb, about fifty yards from the summit of the mountain, and it is a sacred place of pilgrimage among the Mahomedans. The peak is from this called 'Sayid Karram Ke Ziaret.' It is also called 'Wai Sikarram,' as Sayid Karram was supposed to come from a place called Wai. I have also heard it called 'Bahin' or 'Bahin Sikaram,' which is no doubt only a variety of the word Wai. The ziaret is of rude stones, and has a few sticks in it, such as the Mahomedans use for small flags which they attach to ziarets. Worship at tombs is a marked feature of Mahomedanism; but the practice is perhaps in fuller force in Afghanistan than in any other part of the world. It may be only a continuation of the old Buddhist worship of relic shrines, for the mounds of old Buddhist establishments are generally used as Mahomedan burial-grounds in the present day, and it would be difficult to find one without its ziaret, that is, the tomb of some holy person, with large stones heaped up, and a bit of red or white cloth fluttering on the end of a long stick, to indicate at a distance the existence of the shrine. I think it not all improbable that this ziaret, on the top of Sikaram, is an old Buddhist shrine of some kind. Such shrines exist at the present day on the high passes of the Himalayas. On the top of the Parung Law, 19,000 feet, and on the Tunglung Pass, 18,000 feet, there are rude mounds of stones with sticks in them, and having pieces of cloth on the end, containing Buddhist formulas. These Buddhist shrines are called *manies* in Ladak. If Sikaram was an old place of pilgrimage in the Buddhist period, it is not likely that the shrine-worshipping Mahomedans would forsake the old custom of making pilgrimages to the top of it, and the finding of a Sayid whose name would fit into the older name was no doubt easily accomplished. That they altered the names of places in this way, we have more than one illustration. Peshawur was a city of repute when Buddhism flourished, and as late as the time of Akbar, the word was slightly changed merely to give it the sound of 'Frontier Town.' Nagarahara, already mentioned, was changed into Nungnahar, to express 'Nine Streams,' which are supposed to flow through the valley of Jellalabad. Such a person as Sayid Karram may have existed, but as he died 200 years before any Mahomedan came to the Suffaid Koh, the story of his grave being

there, is so far a myth, and I should be inclined still to think that the name of this peak is either Hindoo or Buddhist, perhaps slightly corrupted.

Mr. Scott says that he had to cut his way in the snow for the last 4,000 feet; but that in another month he thinks that a tent could be pitched within 5000 yards of the top. There is another peak (15,000 feet) near to it, called the *Tukht*, which is a Persian word meaning 'throne.' It derives this title from its being flat on the top. About a mile to the north of this last peak is the pass by which travellers go from Gundumuck over to the Kurrum Valley. This is called the *Ogzan Lar*, *lar* meaning 'road.' On the south side of the *Tukht*, between it and *Sikaram*, Mr. Scott saw a small lake about 300 yards in extent, and about 15,000 ft. high. It is at present frozen, but the *Ghilzais* said that in another week or so it would all melt and become deep blue in colour. It is called *Haoza Khas*, the first word meaning 'tank' or 'lake,' and the other 'clear;' hence its name is *Clear Lake*. This is one of the principal sources of the *Surkhab*. Looking down on the south side of the range lay the *Kurrum Valley* on the left, and the *Hurriob Valley* on the right. At present *General Roberts* has five camps in which his force is quartered, these are the *Kurrum*, *Hurriob*, *Peiwar*, *Kotal*, village of *Peiwar*, and *Ali Kheyl*. These Mr. Scott could see far below him like specks.

On the last day in May the head-quarter signallers at *Suffaid Sung* noticed the flash of the heliograph on one of the highest ridges of the *Suffaid Koh*. It was at least 40 miles away; on reading the message it was, 'Who are you down there?' It turned out to be a party from *General Roberts's* column, who had ascended the range away to the east of us. The party remained for some time, and several messages were transmitted.

From the small amount of snow visible on the *Suffaid Koh* in November last I presume the non-existence of glaciers. I think that glaciers existed here at a former period. At *Gundumuck* we could see vast ridges of earth and boulders lying across the plain—the southern ends of these ridges in every case pointing to a gorge in the *Suffaid Koh*, from which I take it that these ridges are glacial deposits. They are very large embankments, being in some cases two or three miles in extent. There is a very large and striking one, extending from the *Gorge of the Kudi Kheyl*. It is quite flat on the top, having a gentle downward incline northwards. This separates the district of *Gundumuck* from that of *Tootoo*, and the plain of *Ishpan* on the west. None of the gorges or valleys of the *Suffaid Koh* are without these ridges. The amount of snow seems to be sufficient to keep up the water in the streams all the year round, and this does not appear to be a country of rain; so it is the snow-melted water which is used for cultivation by means of irrigation. The whole land is covered with canals, which communicate with every field, and lead the melted snow of the *Suffaid Koh* into them. It is evident that at a former period there must have been a much greater extent of cultivation than at present. There are large plains now covered with stones, which were in past times under cultivation. The great stony plain at *Chardeh*

may be given as an illustration. The sappers, in making a new road by Girdi Kas, came upon the old aqueduct, with 'Buddhist masonry' in, and a fine tunnel through a hill, by means of which the waters of the Kabool River were led, for the purpose of irrigating the now desolate plain. Without the snows of the Suffaid Koh and the Hindoo Koosh, Afghanistan would have been all but an uninhabitable desert.

The principal trees on the Suffaid Koh are the *Cedrus deodorus*, called in Persian Alamanza; the *Pinus excelsa*, in Persian Nakhtar; *Abies Webbiana*, in Persian Sirap. The Chalgoza, or edible pine; the yew, called Obakhta in Persian; the Tsarai, or holly-leaved oak, a shrub; and the juniper. The most of these are found in the Himalayas.

The ibex and bear are to be found, and they will no doubt attract the Shikaré, if the new treaty of peace concluded with the Ameer Yakoub Khan should result in law and order, so that it will be safe for travellers to visit the country. I understand that the Government of India hope that this region, which has been hitherto sealed up, will be accessible to visitors; if this be realized, I trust that the splendid mountain ranges of the Suffaid Koh and Hindoo Koosh will in time be now visited by some of the more aspiring members of the Alpine Club.

While describing the range on the south side of Jellalabad Valley, I ought to mention a very magnificent mountain on the north. It is known as the Ram Koond, and it is situated on a line almost direct north from the town of Jellalabad. It is said to be over 14,000 feet high; but standing as it does alone, it seemed higher and grander than any individual peak in the Suffaid Koh range. Looked at from our camping-ground at Jellalabad, it has a long ridge on the east, the sky line of which slopes down to the valley of the Kunar River; this ridge is very steep, almost precipitous on the south, so that but little snow is retained on it. From Gundumuck, which is about 4,600 feet above the sea, we could get a better view of the Ram Koond peak, and its highest point came in sight towards the north. The word 'koond' is Hindoo, and means 'fountain,' hence the name of this mountain means the 'Fountain of Rain,' from a small lake near its summit. This lake is also known as the 'Umrit Koond,' or the 'Fountain of Immortality.' According to the Mahommedans, the Ark of Noah rested on the summit of this mountain, after the Flood. They say that some of the Ark can yet be seen there. On an excursion I made up the Kunar Valley, I expressed to Sirdar Ahmad Khan of Shewa a desire to go up the Ram Koond and see what remains of this relic. He said that the time of the year was not good, the spring was the best; he meant by this about the beginning of May, and he added that the Ark could only be seen on Fridays, which is the Mahommedan Sunday. On the south of the Ram Koond there is a valley given in some maps as the *Dur Noor*, or 'Gate of Light'; but it turns out to be the *Durra Nooh*, or the 'Valley of Noah.' I understood that Sirdar Ahmad Khan gave this as the rendering of the words as they are accepted by those living on the spot, and according to the tradition, it was down this valley that Noah with his family, and all the animals from the Ark, came marching to the plains.

At the west end of the Jellalabad valley is a lower range called the Siah Koh, *siah* meaning 'black.' It is a bare mass of rock, with the most scant vegetation. One or two mornings, after a heavy fall of snow, a little of it lay for an hour or two on one of the higher summits. This range extends from Darunta, where the Kabool River enters the Jellalabad Valley, and only ends at the Jugdulluck Pass, where, from Gundumuck, we could see it dip down and disappear.

The Siah Koh Range separates the Jellalabad and Lughman Valleys, beyond which the lower spurs of the Hindoo Koosh begin. Mr. Scott, when on the summit of Sikaram, could see one of the remarkable peaks of this great range in the far distance, standing up like a needle, and it will indicate how meagre is our knowledge of this important region, when it is stated that the name of this peak is entirely unknown. The map of all this part of the world has up to the present been very sketchy and uncertain. Since the war began, the Survey Department has been most active, and as far as the different columns have penetrated, accurate maps to a large scale have been made.

One of the least known corners of this space has been Kaffirstan, or 'Infidel-land,' it might be translated. For a long time back it has been supposed that the people of that region were the descendants of the Greeks left by Alexander. Lately the language of these races has been studied from some of those who have ventured to Peshawur, and its Sanscrit affinities has now made it clear that the people are of Hindoo race, and that their impenetrable mountains have prevented their conversion to Mahomedanism, and hence they are called Kaffirs. One of these people came into our camp towards the end of March last, and Mr. Jenkyns, of the Political Department, used him as a means of getting knowledge, and got some information; but it turned out that although he had been born and brought up a Kaffir, that the Mahomedans had managed to convert him a few years ago. Mr. Jenkyns did all he could to make this man Koosh, or well-pleased with his visit; and he went back to his own country, promising to return again, and bring back some Kaffirs in a pure and undefiled condition. As yet I believe he has not turned up. I managed to get a sketch of this man, and he had rather a fine type of face, with no trace of Turanian mixture in it.

Since that, Major Tanner of the Survey Department, has made a bold venture to penetrate into this unknown land. There is a tribe on the slopes of the Ram Koond, called the Chuginis. Their language is allied to that of the Kaffirs, and they are known to have been Kaffirs not many generations back, but being on the border country of the Mahomedans they became converted. Major Tanner managed to get one of the Chugini chiefs to come into Jellalabad, and made arrangements to go with him, disguised, to his district, from which he was to be passed through. The Kaffirs and Mahomedans being religious enemies, they are at all times in relationship of war to the knife; and by some it has been supposed, that the only difficulty would be in passing the frontier of this infidel-land. Major Tanner left a few weeks ago, and as yet only one letter has come back from him; from this it would appear that he is all but a prisoner with his Chugini friends. He was

E

L

somewhere about 7,000 feet up on the outlying sides of the Ram Koond, and could get nothing but chupatties to eat. He asked for some more Loonghis, or head-dresses, and knives, to give as presents, to be sent to him. He was still in good hopes of getting passed on. The line he hopes to work through will be in the direction of the Kunar River, towards Chitral, and should he be successful, he expects to come out of this unknown region towards Cashmere. As the whole of this country is mountainous, and is formed of the southern slopes of the unexplored Hindoo Koosh, I am sure that all readers of this will wish Major Tanner success and a safe return, from his raid into Kaffirstan.

June 2—Fort Battyc.—I enclose a sketch made to-day from this place, as it gives a good view of Sikaram and the Tukht Peak. The drainage of this part of the Suffaid Koh comes down to the Murki Kheyl Gorge. The Murki Kheyl is the tribe living at this place, and they give the name to the stream, which is the one flowing past the camp of General Sir Samuel Browne's Division, at Suffaid Sung, Gundumuck.

NOTE ON THE TOPOGRAPHY OF THE GROUPS OF THE
MEIJE AND OF THE GRANDE RUINE. WITH A MAP.
BY HENRY DUHAMEL.*

In the 'Annuaire du Club Alpin Français' for 1875 I pointed out (pp. 319, 320, 327) some errors in that part of the French Ordnance Map, which comprises the district of the Meije. Inspired by the wish of completing these rough preliminary observations, I have been led to undertake a more detailed examination of the topography of the central portion of the Dauphiné Alps, known as the Pelvoux district; and I now lay before those interested in Dauphiné the results of my inquiry, as far as it has yet proceeded, believing that, though incomplete, it is best to place them at once in the hands of my colleagues of the Alpine Club. I hope by this means, while continuing to pursue my researches, to advance the prospects of a perfectly accurate map of the Dauphiné Alps, and to make it, not so much the work of one person, as the product of the united labours of the various Alpine clubs.

First of all, I must state that the triangulation of the French engineers is of unimpeachable accuracy. Many apparent mistakes on their maps will be found, on reference to the minutes of the War Office in Paris, to be either errors in engraving or in the observations of the would-be corrector. In 1878, in the course of 160 observations,† made with instruments of precision, my results did not differ in any marked degree from those of the engineers; whilst with barometers I rarely obtained results similar to theirs, especially anywhere near the crest of a ridge, where the atmosphere is always more or less disturbed. I have no wish to pass a severe judgment here on baro-

* Mr. Coolidge has kindly translated the following article.

† It may be of interest to note that during August 1878, in the course of my explorations, the average deviation of the magnetic compass was $14^{\circ}4$.

metrical observations; but, in my opinion, the degree of accuracy which is claimed for them is often much exaggerated.

The principal cause of the actual mistakes in the French Ordnance Survey of Dauphiné was the total absence of guides in the district in 1853, about which time the survey was made, which of course prevented the officers from exploring the upper regions of the Alps. It is impossible to mark the exact position of every pebble, and the retreat of the glaciers has altered in a considerable degree the appearance of the various peaks and ranges. But apart from minutiae like these, a comparison between the map of the French Ordnance Survey and that accompanying this paper will reveal differences of sufficient importance to make it of use to point them out. May I take this opportunity of expressing my hope that the various Alpine clubs will come to an understanding to consider each year, and to approve or reject the new names assigned by climbers to peaks and passes explored by them? This method would have the double advantage of doing away with all petty personal questions, and of contributing to fix the nomenclature of the Alpine ranges, and of thus avoiding embarrassing synonyms for the same point. So much by way of introduction. Let us now proceed to our proper subject.

The group of the Meije, taken in the widest sense, includes the mountainous region bounded by the Romanche, the Col des Cavales, the Brèche du Rateau, and the Col de la Lauze. We will reserve for a future paper that portion of this district situated to the west of the Brèche de la Meije.

The main ridge of the Meije gradually sinks from W.N.W. to E.S.E. It consists of an extremely jagged arête, in which we can distinguish three distinct summits, viz. the western peak (3,987 m.=13,081 ft.), the central peak (3,970 m.=13,026 ft.), and the eastern peak (3,911 m.=12,832) [the first ascent of this peak was made by M. Duhamel, August 20, 1878], of which the last named only is covered with perpetual snow. Following the crest of the ridge to the W. from the W. peak, we have the Pic du Glacier Carré (3,860 m.=12,665 ft.) above the snowfield of the same name, the 'Doigt' and the 'Epaule.' From the summit of the E. peak the ridge turns abruptly to the S., and we have (from N. to S.) the Pavé (3,831 m.=12,570 ft.), the Col des Cavales, the Grande Ruine (3,754 m.=12,316 ft.), the Roche Faurio (3,716 m.=12,192 ft.) and the Ecrins (4,103 m.=13,462 ft.). The whole of this long ridge from the Brèche de la Meije to the Ecrins is composed of two rocks, granitoid protogene, alternating with dark green chloritic and amphibolic schists. It is also remarkable for the steepness of the slopes to the W., of which the best examples are the wall of the Meije near the Glacier des Etançons, above which the Pic Central rises (975 m.=3,199 ft.), the precipices of the Grande Ruine and those of the Ecrins. On the E. side, on the contrary, the snow reaches very high and there are few sheer descents.

From the Pavé there runs almost due E. a rocky crest, ending in the three Pics de Neige du Lautaret, the height of the most easterly of which is put at 3,537 m.(=11,605 ft.) by the engineers. [It was first climbed by M. Nérot, September 19, 1878.] Midway rises the Pic

Gaspard (3,880 m.=12,730 ft.), [the first ascent of this peak was made from the side of the Glacier des Cavales by M. Duhamel himself on July 6, 1878; the last eighty mètres are described as difficult], a fine rocky peak in shape like a fan, soaring above the left bank of the Glacier du Clot des Cavales, which it supports, and which extends to the foot of the Pavé. On the E. flank of the Pic Gaspard flows down the magnificent Glacier Supérieur des Cavales (which is quite distinct from the Glacier des Cavales properly so-called), the névé of which communicates with the Glacier du Pic de Neige, this latter being in fact a mere branch of the former. The N. slope of the ridge extending E. from the Pavé descends to a branch of the great Glacier de l'Homme, known in the district as Glacier du Lautaret, ice couloirs from which run nearly up to the summits of the Pavé and the Pic de Neige du Lautaret. It is only separated from the Glacier de l'Homme (from which it should not be distinguished) by a rocky spur descending from the E. peak of the Meije (3,911 m.). From the upper portion of this spur an arête runs N. to the Bec de l'Homme (3,457 m.). About midway rises a small rock, about 10 m. high (=33 ft.), which, having been used as a bivouac by several climbers, is known as the Rocher de l'Aigle (3,445 m.=11,303 ft.). From the W. summit of the Bec de l'Homme (3,457 m.=11,342 ft.) the arête in question runs on northwards to the Pic de l'Homme (2,904 m.=9,528 ft.), while another ridge descending to the E. forms the N. boundary of the Glacier de l'Homme. From the E. summit of Bec de l'Homme (3,430 m.=11,254 ft.) flow down two small glaciers known at Villard d'Arène as Glacier du Bec (the more northerly) and Glacier de Selleveille (that to E.). Parallel to the crest, extending from the Bec to the Pic de l'Homme, we have another which rises by the Serret du Savon (3,256 m.=10,683 ft.) and the Tête des Corridors to the central peak of the Meije. It separates the Glacier de la Meije (also called Glacier de la Brèche) from that to which has been given the local name of Glacier de Tabuchet, a word which is the equivalent of glacier in the patois of the district. Before leaving the group of the Meije, I may note that the upper snows of the glaciers on the N. face of the Meije abut on the wall of the Pic Central. From this point they descend in three main streams. The first, on the E., passes between the E. peak of the Meije and the Rocher de l'Aigle, and forms the Glacier de l'Homme. The second, or Glacier de Tabuchet, flows to N. between the Rocher de l'Aigle and the Tête des Corridors. The third falls in magnificent séracs from the Col des Corridors and the left bank of the Glacier de Tabuchet above the Serret du Savon (3,256 m.) to the Glacier de la Meije, of which it is the principal tributary.

GROUP OF THE GRANDE RUINE.—Between the basin of the Glacier du Clot des Cavales and that of La Plate des Agneaux rises a huge promontory running E. and W., the crest of which is so torn and jagged as to recall the teeth of a saw. The peak, which forms its eastern extremity, is known by the natives as the Roche Méane; it is figured in the 'Annuaire du Club Alpin Français' for 1876 (p. 251). The junction of this promontory with the main ridge between the Meije and the Ecrins is marked by a point of the Grande Ruine, 3,721 mètres

high (=12,209 ft.). The northern face of this promontory is vertical, save near the peak of 3,721 mètres, to the E. of which a long couloir of ice descends to the Glacier du Clot des Cavales. The southern slope is much less steep; a detached buttress forms at the base of the arête a sort of elevated basin. The principal summit of the group, the Grande Ruine properly so-called (3,754 m.=12,316 ft.), composed like the rest of this portion of the chain of a fine rose-coloured granite, is situated to S.W. of the peak of 3,721 m., from which it is separated by the Brèche Giraud-Lézin, [this pass was first crossed by M. Duhamel, August 13, 1878; the rocks on the western side were excessively difficult] (3,598 m.=11,805 ft.). It has a certain resemblance to the Rouies and the Ecrins; on the west side it falls sheerly away; on the east a snow-slope reaches nearly to the summit. The Col de la Casse Déserte (3,510 m.=11,516 ft.) lies between the Grande Ruine (3,754 m.) and the summit marked 3,697 m. (=12,130 ft.) From the central and highest summit of the group (3,754 m.) a spur descends to S.E., dividing the upper portion of the Glacier de la Plate des Agneaux (known locally as Glacier de la Casse Déserte) from the glacier which flows immediately from the Grande Ruine, and which formerly joined the Glacier de la Plate des Agneaux.

To the south of the peak (3,697 m.) the ridge, very shattered just here, rises in the peak of the Tête de Charrière (3,442 m.=11,293 ft.) and then sinks to the Brèche de Charrière (3,261 m.=10,699 ft.). To the north the Col du Clot des Cavales (3,128 m.=10,360 ft.) limits the group of the Grande Ruine. On the eastern flank of the Grande Ruine we may distinguish three sets of glaciers. The first is unimportant, and reaches to the foot of the Col des Cavales. The second and most considerable abuts on the base of the wall formed by the three principal summits of the group (3,754 m., 3,721 m.,* and 3,697 m.), and is made up of four distinct branches, of which the northernmost leads to the Col de la Grande Ruine (between the peaks marked 3,721 m. and 3,309 m.), the second to the foot of the Brèche Giraud-Lézin; the third, which is the highest snow in the group, to the Col de la Casse Déserte; and the fourth flows from near the summit marked 3,697 m. Between this last summit and the Tête de Charrière there is a somewhat extensive glacier, and there is also a snowfield at the foot of the Brèche de Charrière.

NEW MAP OF DAUPHINÉ.—M. Paul Guillemin, one of the most distinguished French explorers of Dauphiné, has just published a photographic reduction on a scale of $\frac{1}{300,000}$, of the 'Carte du Pelvoux' (scale $\frac{1}{300,000}$), in which he has corrected many mistakes, inserted the names of all the new passes recently made in the district, and indicated the position of the huts built or in course of construction by the French Alpine Club or the Société des Touristes du Dauphiné. This map is indispensable to any one wishing to know the present state of Dauphiné exploration. It may be obtained from M. Jacques Garcin, 50, Rue Childebert, Lyons, mounted or not, for the sum of 3 fr. 50 c. post free.

W. A. B. COOLIDGE.

* On the map, instead of 3,702 m., the true number must be 3,721 m.

THE MEIJE.—M. Duhamel has kindly pointed out a slip in the narrative of his attempt on the Meije in the third 'Annuaire' of the Club Alpin Français, which I have reproduced in my article on the Meije in the February number. The height of his cairn, according to his calculations, is 3,480 mètres, and not 3,580. This correction should be made at p. 125, line 10; p. 126, n. †; and p. 136, line 4 from bottom, of my article.—W. A. B. COOLIDGE.

ALPINE NOTES.

GLACIERS AND METEOROLOGY.—The following note was addressed last autumn to Mr. R. Scott of the English Meteorological Office, by Dr. Hann of Vienna:—'It is very difficult to account satisfactorily for the retreat of the glaciers, and in fact this has not yet been done. No help is afforded by observations of the quantity of the rainfall or of the temperature of the air, at least from the point of view from which these have hitherto been considered. It is possible that it may be necessary to compare, not the annual mean, but the *mean at different seasons of the year*, in search of a variation, which may be connected with the great retreat of the glaciers. It is much to be desired that meteorologists should pay greater attention to this phenomenon than they have hitherto done, as it seems to me that the periodical variations in the volume of glaciers may indicate more precisely (*or—*are a more sensitive indicator of) changes in climate than the observations (? of quantity of rainfall) made at our meteorological stations. We have here no doubt the aggregate result of many causes, but this is an advantage, even though it may increase the difficulty of tracing out separately the operation of each cause. I think it would be a good thing to suggest at the next Congress, that all the known facts relating to the retreat of the glaciers should be brought together, or at least that a digest should be made of the literature of the subject, which is very scattered, and scarcely within the reach of professional meteorologists. This would be a fitting task for the different Alpine Clubs which, at least the German Club, devote themselves in some degree to the advancement of science. If we could arrive at as complete a knowledge of the facts as possible, we could then ascertain how far they can be accounted for by our meteorological observations. I believe most sincerely that it would be well worth while to encourage such investigations, and ask for your support in promoting this object.

'DR. J. HANN.'

R. H. Scott, Esq., Meteorological
Office, London.

Mr. Scott has sent circulars to the foreign Alpine Clubs, calling their attention to the subject, and at the second Meteorological Congress, held at Rome this year, a resolution was passed in the following terms:—

'Le Congrès attire l'attention des Météorologistes sur l'importance de mesurer les variations dans la longueur et l'épaisseur des glaciers

dans les différents pays, afin de pouvoir en déduire les relations qui existent entre ces variations et celles des éléments météorologiques.'

The following letters have been written by members of our club to whom reference was made on the subject.

10 Southwell Gardens, South Kensington,
March 30, 1878.

'MY DEAR SIR,—Dr. Hann's letter refers to a subject in which I take much interest, and to which I have for some time past felt inclined to apply myself as soon as I am clear of some pressing work.

'The discussion naturally divides itself into two branches. The variations in the dimensions of the glaciers of the Alps, which as far as we know seem to be distributed in cycles of long period, involving a large amount of change, and other cycles of shorter period, and corresponding to lesser changes of volume, must of course ultimately be referred to physical causes of a general nature external to the earth's surface, and the investigation of these forms the main business of meteorology as a branch of physics. But the correlation of the particular facts of glacier oscillation with those which are or may be disclosed by meteorological observations is a more limited inquiry, and one which I think might, even with existing materials, be undertaken with some measure of success, though I am not aware that it has been seriously attempted. The question whether in a given year, the volume of a glacier shall increase or diminish resolves itself into a comparison between the amount of addition to its volume by the annual fall of snow or hail within the glacier basin, and the annual amount of ablation. It is of course obvious that annual, or even monthly mean temperatures throw no light whatever on the inquiry, and that to form reasonable estimates under both heads, nothing short of a careful examination of the daily records made in suitable stations can be of any use. Not having yet attacked the subject, I merely hazard the opinion that for some years past, the number of such stations has been sufficient to give some promise of useful results.

'My chief doubt is, whether the observations hitherto made at high stations in the Alps will be found to throw as much light as is desirable on the subject of ablation. A chief element in this is the direct action of solar radiation which operates to a very sensible extent at all seasons, and which would be found to correspond much more nearly with the records of a black-bulb thermometer in the sun, than with those of a thermometer in the shade,—but quite as important a factor in ablation is one to which I long ago called attention, but which has been very little noticed by writers on glaciers, and that is the effect of rain falling in the higher region, especially when, as sometimes happens, its temperature is considerably above 0°C. This is often shown by the sudden and rapid increase in the volume of glacier streams out of all proportion to the actual rainfall. At first sight it might seem as if the additional volume of water reaching the glacier stream—which is the measure of the ablation—could be no more than that due to plunging ice at melting point into the volume of water representing the rainfall on the glacier basin at the temperature of the latter, but there is a further,

not inconsiderable, amount due to the mechanical effect of the rivulets of comparatively warm water on the glacier surface, which brings down a considerable quantity of glacier ice in a condition of *sludge* from a higher position, where the ordinary ablation is less, to a lower one, where this is greater.

‘There are several other points connected with the inquiry at which, for lack of time, I can merely glance. Such is the prodigious difference in the amount of ablation occurring between a state of the weather when the sky is clear at night and cloudy by day, and that when cloudy at night and clear by day, although the difference between the records of the thermometer in the shade may be inconsiderable.

‘Finally it may be found that one of the chief elements in the shrinking of the glaciers of late years, is due to a diminished snowfall in winter, along with an increase in the late spring. This operates in various ways (sufficiently obvious) to increase ablation, and diminish additions to the volume of the glacier.

‘I have several times tried to make brief and casual observations on the variations occurring in the volume of glacier torrents. There are many difficulties, and at the best such casual observations can be of little use,—but there are many stations in the Alps, such as Zermatt, Chamouni, Moril, Rhonegletscher, Grindelwald, &c., where, with a moderate amount of intelligent trouble, such observations could be systematically recorded, and thus secure the most important datum in the inquiry, for the drainage *plus* the amount of evaporation from the glacier surface, and *minus* that due to rain or snow falling below the level of *névé* and speedily melted, exactly corresponds with the ablation. Besides this, it could without extra labour be connected with observations on the amount of glacial mud, brought down by glaciers—a most important point in connection with the geological results of glacial action, as to which no adequate observations exist.

‘A much less important, but yet a useful, addition to the records kept at existing stations, would be an entry of the temperature of the rain falling, when this is sufficient in volume to differ sensibly from that of the atmosphere. If you can promote these objects, especially the former, you will, I am sure, greatly assist the progress of Alpine Meteorology. Believe me, &c.

JOHN BALL.’

Robert H. Scott, Esq., F.R.S.

5 Sussex Place, Hyde Park, March 1, 1879.

‘MY DEAR FRESHFIELD.—The subject which Dr. Hann has recommended to the attention of Alpine Clubs is one of great interest, but also of considerable complexity.

‘Among the various conditions of the problem, it is comparatively easy to see which influences tend in the general direction of glacier extension, and which in that of glacier contraction. But even with respect to the general tendency of certain conditions, there appears to be more uncertainty than might be supposed. It has been suggested that the great extension of glaciers, which is known to have once prevailed, may have been due not to lower temperatures than now exist, but to a greater amount of condensation. This, however, implying

more rainfall as well as more snow, might not improbably produce precisely the opposite result.

‘And the relative efficacy of the several influences, temperature, atmospheric or solar, snow or rainfall, and the seasons at which they occur, are points upon which plausible conjectures may be formed, but the materials for a definite opinion are so imperfect that no satisfactory conclusion can be arrived at.

‘How far then can members of Alpine Clubs assist in collecting such materials? In the first place careful and continuous meteorological observations are required, and as remarked by Dr. Hann and Mr. Ball, mean temperatures alone can throw little light on the question. The importance of observations of solar radiation has been pointed out, but to give these a definite value they should include a careful note of the duration as well as the intensity of the action. With regard to atmospheric temperature, daily observations are absolutely required, and it seems to me that the important element is not the mean temperature for the 24 hours, but for those hours during which it exceeds 0°C., and the number of those hours. The amount of snow or rainfall and the temperature of the latter are of course important factors.

‘But towards the collection of these data, which must be systematic and long continued to have any value, those members of Alpine Clubs whose usual residence is at a distance from the mountains can contribute but little. And even the measurement of the volume of glacier streams, suggested by Mr. Ball, would require to be made at short intervals and for long periods of successive years, before any definite conclusion could be based upon them.

‘But as I understand the suggestion of Dr. Hann, it is rather that our members should direct their attention to recording the actual changes in the condition of the glaciers which express, as he says, the integration of the meteorological facts. And this I think they might very usefully do. Careful measurements might be made of the form and position of the extremities of the glaciers, but it would be less difficult and still better to take sections across the surface of glaciers at different parts of their course, in positions which could be easily identified. These sections should be referred to bench-marks on some neighbouring rock, and if possible connected with the levels of the government surveys.

‘The comparison of such sections, both at different periods in the same year, and also from year to year would afford the most definite information as to the actual increase or diminution of the glaciers; and the most useful sections would be those taken in the most accessible situations, just above the final ice-falls, as, for example, opposite the Montanvert, which would indicate, more certainly than even a survey of the extremity of the glacier, the general result of its progression and ablation.

‘The instruments used need not be such as materially to encumber the mountaineer, as minute accuracy would not be necessary. Yours very truly,

‘R. C. NICHOLS.’

D. W. Freshfield, Esq.

‘DEAR MR. SCOTT.—I have no doubt that the chief cause of the

retreat of the glaciers throughout the Alps has been the comparative snowlessness of modern winters, in other words the deficient supply. I have had constant letters from a Chamonix guide of late years, and their uniform strain has been the little snow and consequent possibility of fieldwork in the winter months.

'The exceptions to the general movement of the ice at Zermatt and in the Engadine are doubtless to be accounted for by the snow supply having been in those districts less deficient. Each ice-stream should be studied separately. For instance, at Zermatt we may find the Gorner Glacier advancing, while the Findelen Glacier is in retreat. The first thing a careless observer will say is, 'Most mysterious! since they both come from the same névé.' But examination shows that though this is true as to half the Gorner supply, the larger half, perhaps, comes from a high plateau exposed to all the snowfall brought up by the S.W. wind, from which the Monte Rosa range shelters the lower névé which feeds both Gorner and Findelen.

'Meteorologists, it seems to me, must in the first place ascertain the kind of seasons which control the movements of the ice. They will then be able to use the records of glaciers to some extent as clock-hands, indicating what the seasons were in past times. They must bear in mind of course that it will take a year or more for the bottom to respond to the supply poured in at the top, and that the periods of greatest advance will follow not coincide with those of greatest supply.

'On one point I think the public mind ought to be disabused. The stories of the extraordinary smallness of the glaciers in the Middle Ages, 1300-1500 A.D., of babies crossing the Mönchjoch, etc., must be abandoned along with the Tell legend. Venetz's proofs (quoted *Alp. J.*, vol. vi. p. 30) prove no more than such an advance as took place at the beginning of the present century. There has been, I believe, no great change in the extent of the ice, and consequently no serious deterioration of the Swiss climate since history began. In Roman times the ice must have been pretty much where it is now. Had it been much lower, such a pass as the Great St. Bernard could not have been used as a highway. There have been, I believe, a series of oscillations confined within roughly speaking the same limits. From 1560-1600 there was one of the greatest advances; and during this time so severe were the winters that the Lake of Constance was three times frozen over.

'The following facts and references may be worth adding. The mountaineers who were on the Alps last winter found it comparatively warm (sometimes above freezing point) between 10,000 and 13,000 feet. A warm southerly wind swept about the great peaks, while the lowlands were nipped by a black frost and shrouded in frozen mists.

'The Italian Alpine Club have founded a series of meteorological stations at heights from 9,000 ft. downwards all along the southern side of the Alps, the observations at which are regularly published.

'In Petermann's "Mittheilungen" for October 1878, there is a long article by Prof. Fritz, on the periodical movements of glaciers, in which the statistics attainable seem to have been carefully collected. The Professor attempts to prove that sunspots are responsible for the movements of glaciers, as well as for our commercial crises.

‘There is also an article on Caucasian glaciers in the last number of the German Alpine Club’s publication. They are in retreat, but not such a rapid retreat as that of the Alpine glaciers.

‘In a very rare book by a Mons. Bordier, “Voyage Pittoresque aux Glacières de Savoye” (Geneva, 1773), there is a passage which curiously anticipates Dr. Hann’s suggestion, and another which illustrates my views as to the oscillations of the ice.

‘Something may be done in the direction suggested by individual members of our Club. But it is to the foreign Clubs who are on the spot, and with large funds, that you must look in the first place.

‘DOUGLAS W. FRESHFIELD.’

ALPINE PICTURES IN 1879.—On the whole, the impression left by the pictures of Alpine scenery shown this year in exhibitions, or at the painters’ studios is satisfactory. No new genius has appeared, but such progress as there is is in the right direction. There are welcome signs that the doctrine of the old school of mountain painters is almost obsolete, that we are no longer to be asked to believe that mountains must be altered into something impossible in nature before they can be presented on canvass. The new school seem to agree that though they may omit, they will not wilfully distort or falsify.

So long as they adhere to this principle they will secure one great advantage. When there is nothing to confuse and derange them, our recollections come at once to the painter’s aid. He may not have been able to give us all there was to see, but if he gives us *nothing but what he saw* memory supplies his omissions; while, at the least touch of falseness to local truth she flies altogether.

We shall briefly note the year’s work of our artistic members.

In the Royal Academy Sir Robert Collier’s ‘Matterhorn from Zermatt’ occupied a conspicuous place. It is a large work boldly conceived and most conscientiously worked out. The peak has never been painted with such firm and delicate precision. It could hardly be better done. As a whole, the picture is the best this distinguished amateur has yet produced, and will raise his reputation with artists by its technical skill, as much as with mountaineers by its truthfulness. Sir R. Collier’s other pictures of a glacier and of the Wetterhorn (in Suffolk Street) do not reach the same level.

Among the water-colour artists, Mr. G. Barnard, as almost an original member of the Club, claims first notice. A lover of the Alps before they had become a fashion, Mr. Barnard was one of the first to paint peaks as they are, and thus to make the most effective protest against the ignoble representations of them which were common twenty years ago. Those who have known his art during this period know exactly its characteristics. Pure in colour, painstaking in drawing, his most successful works are those which represent some quiet effect of evening light on the mountains. When he finishes away from nature he is apt to lose some of the character of the scene. His best drawing this year was a view from the Wengern Alp.

Mr. Croft does not want for force and daring. His danger lies rather in the facility with which he can seize a striking effect: a facility which, unless the painter bears in mind Sir Joshua Reynolds’s precept

that it is his business to lead the public up to his level, not to go down to theirs, is not without grave dangers. This year, however, Mr. Croft has produced much work which is open to no reproach on this score. His large picture of the Tschierva Glacier did not please us so much as many of the others. Nothing, however, could be more thorough and successful than 'A view in the Rosegthal.' 'The Matterhorn from the Stockje' was a noble ice-scene carefully and soberly worked out. The glacier foreground was particularly good, one of the best we have seen in water-colour. Among the most charming drawings were two of the promontory of Bellaggio. The numerous drawings of the Maritime Alps and the Estérrels from the neighbourhood of Cannes were also interesting. Snowy alps seen over blue waves are to most of us a novelty.

In the old water-colour gallery two Swiss landscapes occupied prominent places. Richardson's 'Valley of Lauterbrunnen' was a specimen of the old school. Whatever its merits as a drawing, as a representation of the scenery of the Oberland it was worthless. Collingwood's sunset from the Faulhorn was an attempt to deal with a most difficult problem. If there is one subject we should hesitate to recommend to artists it is half a panorama. The outlines of the Oberland peaks were correct, the colours unexaggerated. But the power shown failed to justify the selection of subject. A smaller 'Monte Rosa from the Moro' was more successful, rather because in a picture one mountain is better than half a dozen than from any superior force in the execution.

Having noticed in detail Mons. Loppé's pictures last year we shall not linger over this season's show. There were few large pictures and these were of a character already familiar. But there were a crowd of studies from nature, many of them of a value which the absence of frames, perhaps, in part concealed from the general public.

Hitherto ice has been Mons. Loppé's favourite study. He has now achieved a success in other 'Forms of Water.' The Märjelen See has often been painted. But we have never seen any representations of it approaching in local truth to some of these studies. A miniature iceberg floating upon its own shadow in the dark luminous lake under a stormy sky, was equally admirable in colour and composition.

Among the winter sketches the most remarkable were those of the Wetterhorn, and of the meeting of the Rhone and Arve. In the former the painter has caught Nature in one of her most exquisite moments. A mist has suddenly rolled away, leaving clear against the luminous, intensely frosty sky the great mountain, heavily draped in a snow-mantle, golden with sunset, except where the shadow of the Eiger lies upon it. There is no colour in the picture; for the foreground is a sheet of snow with some half-buried chalets. It attempts to do for the Alps in winter what Mr. Whistler has done for the Thames in fog.

Mr. E. Walton's exhibition contained some new work from the Engadine. But, unfortunately, there is little new to be said of it. Mr. Walton can paint a brilliant snow-peak or mountain mists as well, if not better, than any one. But he is content to repeat year after year

one or two effects, the supreme beauty of which is not so obvious to others as to himself, and for their sake to neglect all that gives their individual character to the various Alpine regions.

Two drawings of 'Davos in Winter,' by Harry Godwin in the Suffolk Street Gallery deserve mention for their delicacy and truth. We should be glad to see more of the painter's Alpine work.

Two foreign painters have carried us to the Himalayas and Caucasus.

The Russian Vereschaguine, whose very striking sketches of Central Asia were shown some years ago at the Crystal Palace, had this summer at Kensington a collection of views in India, amongst which were two very forcible pictures of Kinchinjunga and many oil-sketches of Himalayan scenery. The alpine landscape suggested by the great mountain seen from Darjeeling is the view of Monte Rosa from Monte Generoso. In each a great snowy mass towers over forty miles of lower hills.

Signor Premazzi exhibited at the Burlington Gallery some water-colour drawings of the Crimea and Caucasus, amongst which were views of Kazbek, Elbruz, and Ararat, and several on the Darial road. They were exceedingly faithful, and made us regret that a painter with so much technical skill in the literal representation of scenery had not penetrated into the more beautiful portions of the Caucasian chain.

EXCURSIONS ROUND PINZOLO.—The descriptions I had read in 'Italian Alps' had for some time given me a great desire to visit the Trentino, and last year I had the satisfaction of spending six weeks in that beautiful district. Mr. Freshfield had suggested to me an excursion, namely, to the Lago di San Giuliano, and from thence into the Val di Borzago. As I consider this one of the finest easy walks in the district, I give the following details. From Pinzolo to the Lago di San Giuliano there are several ways. I decided to cross the flat and fertile valley, and to strike straight up the wooded slopes to the west of Pinzolo. At the first châteaux reached, I was told that the direct course I had taken was by no means the best, and that a path that zigzagged to the left was the easier route. The châteaux themselves are visible from Pinzolo, and any one wandering to them is rewarded by an unusually fine view of the shattered dolomite walls of the Brenta group. Passing laburnum trees in full flower, I turned to the right through the dense fir forest, and skirted the southern slopes of the Val di Genova, ascending slightly as I went. In a short time I emerged from the wood, and found in a small clearing a large stone-built malga. There were no herdsmen to inquire of, but a path stretched away evidently in the desired direction. Along this path I wandered amidst masses of rough granite rocks half covered with rhododendrons in bud and brilliant bloom, which stretched on every hand in countless multitudes. Ascending a slope I reached the summit, and saw a small lake immediately below me. This I at first fancied was the Lago di San Giuliano, but a reference to the Austrian Military Map corrected my mistake. I skirted this tarn, and crossed the ridge that rose beyond; but lost time amidst a wilderness of fallen rocks on the other side. The easier plan is to descend a little towards the Val di Genova, and cross a lower part of the ridge. Im-

mediately in front of me now lay the twin lakes of Garzone and San Giuliano; and hard by stands the little chapel built in memory of the hermit after whom the second lake is named.

I had now to decide how best to reach the Val di Borzago, for it seemed probable that if I at once climbed any of the mountains to the south, I might become so embarrassed by the confusion of ridges and peaks as to be compelled to descend into the Val di Rendena. This was the more probable as the clouds were now settling down on the summits with the persistence of this most melancholy season. I therefore crossed another ridge to the west of the two lakes, and passing by several tarns clustered in the next valley, I found that instead of a complex collection of rocky peaks, I had now only a single ridge separating me from the Val di Borzago. This I crossed by one of several gaps, on all of which, however, the clouds were now gathered gloomily. I came down by steep grassy slopes of the kind that some of our friends with nailless boots find only too easy to descend.

On reaching the highest chalets, I was most warmly welcomed by the herdsmen, who probably had never before been visited there by any traveller; and who exhausted their vocabulary of German, consisting of about seven words, in honour of my arrival. They took me to be an Austrian officer of engineers, a distinction which I enjoyed throughout this district, my tent and sheets of sketching paper helping the illusion. I bade the herdsmen farewell, and while I pursued my downward course, I could still hear them vociferously interchanging remarks as to me and mine. The clouds were now lifting, and revealing wide-stretching snow-fields at the head of the valley, crowned by the rocky crest of the Carè Alto.

Passing down the lovely Val di Borzago, I was soon in scenes of the richest beauty, birch, and beech, and chestnut, flourishing as they seldom do among the mountains, and forming many a soft woodland picture, while high overhead gleamed the shining snows. At the village of Borzago I refreshed myself at the house of a facetious native, who had evidently suffered much from the fluids sold at inns which announced 'Buon Vino,' and he had determined if theirs was good he would sell bad. Accordingly he painted over his door 'Vendita di Cattivo Vino.' I only hope future visitors may find his wine as good as I did. This reminds me of a humorous tradesman in the recent Paris Exhibition, who put over his wares a large placard, 'This is the only stall in this department which has *not* received a prize medal.'

From Borzago to Pinzolo there is a good road, and the 7½ kilos can be done either on foot or in the stollwagen from Tione, which passes every evening; or the traveller may proceed much more comfortably in a carriage, ordered before starting, of that most attentive of hosts, Collini of the Corona.* The route I have described will take about ten

* In the Appendix to *Italian Alps* the two inns at Pinzolo are mentioned as Bonapace's and the Posta. At present, at any rate, Bonapace's and the Posta are one, and the Corona is the other inn. The Corona is the best suited, I think, for travellers, who will find there cleanliness and great attention from Signor Collini. They must not, however, expect to find im-

hours; and although probably there is no point more than 5,000 feet above Pinzolo, the several ridges to be crossed add to the total height to be climbed.

The Dos di Sabione has already been described in the 'Alpine Journal;' but the Palu di Mugbi (see Austrian map), which is several hundred feet higher, and which affords a finer view, has so far remained unnoticed. From the windows or the garden of the Corona at Pinzolo this mountain appears to be a spur of the Cima di Nafdisio, as Mr. Freshfield calls it, or the Cima di Vallon of the Austrian map. The way to the Palu di Mugbi is readily found; a new cart-track from Giustino leads to the Malga of Bandaloro, and the stream that supplies this ch  let may then be followed for some distance. The traveller now mounts the green slopes of the alp that divides the Dos di Sabione from the Pra Fiori ridge, and he can then choose his own way among the junipers and *legf  hren* to the top of the pyramidal Palu di Mugbi. This mountain breaks away on the eastern side into precipices of dolomite, and is thereby completely cut off from the Cima di Nafdisio, while its nearness to the Cima Tosa and other neighbouring dolomites, makes it an admirable spot for studying their strange and fantastic structure. To the south the traveller looks down the Val d'Algone, the steep sides of which are softened with the richest verdure, and in the distance the ridges of the sunny south are paled by excess of the Italian light. Turning northward, in the opposite direction, the eye ranges along the Val d'Agola, over the sterner slopes that surround the Hospice of Campiglio, and rests far in the distance on the Oetzthal Alps. The special glory of the view is, however, in the range to the westward, where Presanella, Adamello, and Car   Alto rear their noble forms, and are here seen to better advantage than from the lower Dos. An additional interest is given to this ascent by the rising into view over the lower parts of the Presanella of several peaks of the Ortler group.

While I draw attention to this view of the eastern side of the Adamello-Presanella chain, I would recommend that another point should be visited, which commands the northern side of the same range. Most of the travellers who take the Tonale pass are content with the glimpse they have from near the Austrian fort of the steeply scarped sides of the Presanella. If, however, any one on a clear day will take the trouble to mount even one of the lower spurs of the Monte Tonale, he will be rewarded by a magnificent view of the Adamello and Presanella ranges, the latter here in grand outline showing the three summits which have earned for it the name of *Il Triplice*.* From this point, too, the eye may range over many a distant dolomite peak, the Lang Kofel and the Cimon della Pala being both in sight.

During the six weeks I spent in the Trentino I saw only three travellers. Many more will doubtless come this summer, when the Stabilimento of Campiglio, burnt two years ago, is reopened. Long, however, may this district be preserved from the crowd which now

mediately on arrival complete provision made for them, but remember that at Pinzolo travellers are still few and far between.

* See the illustration.



A. Williams del.

**PRESANELLA
FROM MONTE TONALE**

renders the Engadine almost intolerable, and from the placards which there threaten condign penalties on the hapless tourists whose horses shall dare to trot in the streets, whose feet shall tread the fields, whose misguided fingers shall gather gentian, or who shall unwittingly purchase undried edelweiss!

ALFRED WILLIAMS.

THE PALA DI SAN MARTINO.—The following extract from the book at San Martino has been forwarded to us, recording a second ascent of this formidable peak by Herr Meurer's former co-editor Herr Isler:

'On the 11th August (1878) the second ascent of the Pala di San Martino was made. Guides (new to the mountain), Alessandro Lacedelli and Angelo Tangiacomi, both of Cortina d'Ampezzo. This second ascent was preceded by two unsuccessful attacks (on the 9th and 10th August), one from the south side, in which seven-eighths of the height of the peak were mastered, and the second by a gully which led to a point 500 feet below the summit.'

The route followed in the successful ascent seems to have been identical with Herr Meurer's.

A WINTER TOUR IN THE DOLOMITES.—Winter excursions in the high Alps are no longer the novelties they were when Mr. H. Walker and I crossed the Strahleck and Finsteraarjoch in December 1866. Mont Blanc, the Jungfrau, the Schreckhorn, and the Glockner, have all been climbed at that season; but I have not heard of any comprehensive tour of an Alpine district similar to that which (again with Mr. Walker) I made last January in the Dolomite mountains of the Southern Tyrol.

As we did not deviate from carriage roads and mule paths, the journey may reasonably be regarded as below the level of the Alpine Club and the 'Alpine Journal'; but I am not without hope that the following brief particulars may tempt some of the younger and more energetic members of the Club to improve upon our example.

We arrived at Botzen over the Brenner on January 19, in forty-eight hours from London. From there our route was as follows:—To Castluth; over the Seisser Alp to St. Ulrich in the Groden Thal, returning to Botzen; by rail to Toblach in the Puster Thal; to Schludersbach; by the Lago di Mesurina to Auronzo, and round by Piève di Cadore to Cortina; round the Monte Cristallo by the Tre Croce, Lago di Mesurina, and Ampezzo Pass; over the Tre Sassi to Caprile and Agordo; by the Cereda Pass to Primiero; thence by St. Martino and Paneveggio to Predazzo and Vigo (from which place we had a glorious walk to the head of the Vajolet glen), and so by the Caresa Pass and Karneid Thal back to Botzen on February 2.

Now, of course, there was nothing exciting in all this; but we nevertheless spent a very agreeable fortnight. The whole country was deep in snow; but the weather was generally good, we saw everything to perfection; and although the appearance of tourists at such a season was an absolute surprise, we everywhere found most comfortable accommodation and excellent fare,—not excepting such out-of-the-way spots as Auronzo and Paneveggio. There seemed to be much more business doing in these valleys than, according to my experience, is the case in Switzerland in winter, and the inns are consequently better

prepared to receive strangers. The roads over the Ampezzo Pass, and *viâ* Paneveggio to Primiero, are kept open; while even from Toblach to Auronzo by the Lago di Mesurina there is a continuous local traffic, liable of course to be interrupted by bad weather.

The journey was our first introduction to the Dolomites. A preconceived idea we had formed, that the scenery must be grander in winter than in summer, was quite confirmed by what we saw and were told. Both Santo Siorpaes and Ploner of Schluderbach, unprompted and independently, loudly declared that the mountains were incomparably more striking as we saw them, snow covered, than in their summer guise. I greatly doubt whether either the Marmarole or the Antelao, if bare of snow, would have produced upon us anything like the effect which the former did as seen from Pieve di Cadore, and the latter all along the road from Tai to Cortina; while, to take an example of another kind, the walk from Agordo to Primiero over the Cereda Pass, which (except in 'Italian Alps') has been generally damned with faint praise, seemed to us, under the conditions in which we took it, the reverse of tedious, as well as extremely picturesque.

The mere valley scenery may very likely be less striking in mid-winter than in summer, and the landscapes as a whole may possibly lose something of the peculiar charm which is attributed to them by the devotees of the district. However this may be, we saw enough to lead us to hope to be, some day, in a position to make the comparison for ourselves, while we can without hesitation recommend those who as yet only know the country in summer, to make its acquaintance in winter at the earliest opportunity.

I ought perhaps to add, as a warning or an encouragement as the case may be, that winter ascents of the higher Dolomite peaks (with the exception possibly of the Marmolata) would probably be found extremely difficult, if practicable at all; and that it is very doubtful whether even the best of the local guides could be induced to undertake them.

A. W. MOORE.

THE CHAMONIX RÉGLEMENT.—The Préfet of Haute Savoie, by an edict dated May 25, 1879, has modified in some respects the Réglement of 1877. The following are the most important innovations:—

Two members of the French Alpine Club, to be appointed by the Sous-Préfet of Bonneville after reference to the 'Direction Centrale' of the Club, are added to the examining body.

Candidates for admission to the Company of Guides must receive two-thirds of the votes of the examiners.

Travellers are free in the choice of guides.

The general rules as to the number of guides to be supplied for glacier expeditions is followed by this very important exception. 'It is permissible for any traveller to take for the above-mentioned expeditions a less number of guides and porters, but on his own responsibility. Nevertheless, if the expedition with a reduced number of guides and porters offers dangers, the guide-chef and guides may refuse their services.'

The following alteration affects the guides only:—'On every guide and porter there shall be levied on behalf of the company the following

taxes, viz. 5 per cent. on ordinary expeditions, 15 *per cent.* on *extraordinary.*' This is a concession to the outcry raised by the tax of 20 per cent. on extraordinary expeditions created by the previous Règlement. But this monstrous imposition, worthy of the lowest type of trades-unionism, must surely disappear totally in the final revision which may be hoped for before next season. A tax levied on the best glacier guides for the benefit of the lazy mule-drivers is so obviously unjust and immoral, that it can only need attention to be called to it to ensure its repeal. We trust the Alpine Congress at Geneva will give the Préfet of Haute Savoie the benefit of its opinion on this subject, and make clear to him that the course hitherto followed in dealing with the guide question has resulted in depreciating the character of Chamonix guides, and in driving mountaineers to other districts, thus materially affecting the prosperity of the valley. A comparison of the number of glacier expeditions made with local guides in the Mont Blanc and Monte Rosa chain would prove this fact, which is within the knowledge of every recent traveller.

It is due, however, to French administration to say that its failure, as regards Chamonix, is to be accounted for in great part by the national crisis. There have been five Préfets at Annecy in two years! There is every reason to hope that the present officer will have time and disposition to deal with the problem which his predecessors have left him. It is worth his best attention. The affairs of Chamonix are in one sense those of a remote country village; but in another, the place, by its inseparable connection with the most famous mountain of our continent, has an exceptional importance, and what is done or left undone there is known and discussed in half the capitals of Europe.

THE DOM JOCH AND LYS JOCH.—In my paper, 'An Ascent of the Täschhorn from the Fée Glacier,' published in the last number of the 'Alpine Journal,' I made reference to the height of the Dom Joch in comparison with that of other Alpine passes. In my own MS. I had placed it third on the list, attributing to it a slight superiority over the Lys Joch. It appeared, however, to the editor, that my claim in favour of the Saas Grat Col was not so clear as to allow of the Lys Joch being thus definitely superseded; and he accordingly altered the order of precedence as I had given it.

I am by no means prepared to accept Mr. Foster's *estimate*, that the Dom Joch 'cannot be less than 14,200 feet;*' but at the same time, such superiority as I claimed for it, although a narrow one (22 feet) remains undoubted according to present measurements.

For the height of the Dom Joch, we have the excellent authority of the Federal Survey and Swiss Alpine Club Maps, in both of which it is given as 4,286 mètres, i.e. 14,062 English feet. The height of the Lys Joch has, unfortunately, not been trigonometrically obtained. Zumstein gives the height of the plateau as 14,100 feet, which may fairly be taken as about that of the pass (though he speaks of *ascending* somewhat to it). This barometrical reading was taken on July 31, 1820.† It is not, however, possible to place implicit confidence in the

* *Alpine Journal*, vol. iv. p. 372.

† *Ibid.* vol. v. p. 136 *et seq.*

accuracy of Zumstein's result, on account of the error, since established in his hypsometrical calculations as to the Vincent Pyramid and Zumstein Spitze. The altitude as given by him in this latter case was in excess of the real height, as since ascertained, by 88 English feet. 'Ex uno disce omnes,' may not unreasonably be quoted against him. The only authorities of any real importance, are Mr. Tuckett's determination, and the deduction which is to be drawn from the fact, that the closely neighbouring summit *marked* Balmenhorn (but which is probably the 'Schwarzhorn,' of Signor Prina, when he made the Ippolita Pass, on September 3, 1875) * is 4,324 metres, or 14,187 English feet. This rock is visible in photographs of the Monte Rosa chain taken from the Riffelberg, over the depression nearest the Lyskamm, which is, however, somewhat lower than the true Lys Joch. Mr. Tuckett estimates this peak at 100 to 150 feet above the Col. On June 15, 1861, Mr. Tuckett spent an hour and a half upon the Col itself, and the results of his barometrical and (two) boiling-point observations (after comparison with corresponding ones on the Great St. Bernard) enabled him to deduce the height of the Col as follows:—Barometer, 14,053 English feet; mean of two boiling points, 14,028; mean, 14,040·5. Since the appearance of my paper, published in the last number, I have corresponded with Mr. Tuckett on the subject, and he sees no reason to doubt the practical accuracy of his figures thus given.

M. Joanne and Herr Tschudi in their well-known Guide Books, and the Abbé Gorret (in his Guide Book for Aosta and its neighbouring valleys, published in 1877), credit the Lys Joch with 4,344 metres (14,253 feet). These reckonings are obviously derived from the figures 4,344 on the Federal and Swiss Alpine Club Maps, which though printed on the Lys Joch, refer to the Ludwig's Höhe, and not to the pass.

F. T. WETHERED.

AN ALPINE VETERAN.—I regret to have to ask space to record the death of a famous mountaineer, the dog Tschingel, which occurred at Dorking on June 16.

Tschingel was purchased in the Lötschthal when a puppy by Christian Almer in September 1865.† She made her *début* as a climber by an ascent of the Torrenthorn from the Maing glacier, and a few days after crossed her first glacier pass, that from which she derived her name. For several years she lived at Grindelwald as the watch-dog of Almer's house, and in July 1868 passed into the possession of Miss Brevooort and myself. In order to follow us she had perforce to climb peaks and traverse passes, and she acquitted herself so admirably that for nine summers (1868 to 1876) she was our constant companion in our Alpine campaigns. Her list of 'grandes courses' amounts to no less than fifty-five, besides numberless excursions in winter and summer on glaciers and up to bivouacs, beyond which it was not judged prudent to take her. Among her more remarkable feats were Mont Blanc, Monte Rosa, Finsteraarhorn, Aletschhorn (twice), Nesthorn, Jungfrau from Wengern Alp, Jungfrauoch with *descent* to Wengern Alp, Eiger, Wetterhorn, Mönch

* *Alpine Journal*, vol. vii. p. 321.

† Vide George's, *The Oberland and its Glaciers*, pp. 205 and 208-10.

from Wengern Alp, Ochsenhorn and Joch, Grand Combin, first ascents of the Râteau, the Grande Ruine, the northern Aiguille d'Arve (lower summit), Pic de la Grave; first passages of the Col de la Casse Déserte, Col du Vallon de l'Enchâtras; also the Col de la Pilatte (*descending* to Vallouise), the Col des Ecrins, Brèche de la Meije, and Col du Glacier Blanc. In no one instance did she ever make a false step, and very rarely required assistance; but on the Diablerets showed a local guide the best way down the precipices of the Creux de Champs. Her Alpine career closed with the death of her mistress. From that time she spent a quiet English country life, beloved and respected by all who knew her, until she passed away at a good old age. Of her excellent qualities this is not the place to speak at length. Suffice it to say that she had every canine virtue, was very good-tempered, extraordinarily intelligent, and of unswerving loyalty and affection to those around her.—W. A. B. COOLIDGE.

NOTICES.

GUIDEBOOKS.—Several of the old-established guidebooks have recently appeared in new editions. 'Murray's Handbook,' without changing its original character as a general traveller's guide, has at last been brought up to date with regard to glacier expeditions, and contains much information useful to mountaineers and not to be found elsewhere. The portion dealing with the Pennine Alps having passed through the hands of the Alpine Clubmen who know them best, may be trusted to contain the most recent and accurate information; and young travellers may now read the chapters of general advice with a certainty of finding in them the results of the best experience of English mountaineers. Special attention has been paid throughout to the class of travellers who, without being mountaineers, wish to make a few of the easier glacier ascents and excursions. For example, the relative difficulty and merits of the various passes of the Mont Blanc chain are adequately set out. Several new district maps have been inserted, and those of the Chamonix and Zermatt districts have been re-engraved. The work has been divided into two volumes convenient for the pocket.

Herr Karl Bädiker has issued new English editions of his Handbooks for Switzerland and the Eastern Alps. They are concise, and correct, and the editor has carried out his aim in every respect with singular industry and ability. The only technical oversight we note is the use of French feet in some of the panoramas and of mètres in others, while in the text English feet are used. Whether the result is our ideal guidebook is another question. For mere practical information these volumes are probably, as far as they go, the best of their kind. Nowhere else do we find so many details as to prices and modes of conveyance. In maps and panoramas they distance all rivals. They do these things better in Germany! But as books they seem to us to have the fault of being unreadable; and owing doubtless to the necessity for compression, the descriptions of the principal routes above the snow-

level (e.g. the Col du Géant) are meagre and unsatisfactory. To less concentrated works, such as the 'Alpine Guide' or Murray's 'Handbook,' they bear the relation a meat lozenge does to a good meal. Both are excellent things; the one in one's pocket on the road, the other at the inn in the evening. In one respect, however, the Leipzig publisher puts to shame his English rival. He is independent of the 68 pages of miscellaneous advertisements, which to the regret of all who use it, still find a place within the cover of the 'Handbook.'

Mr. F. S. Reilly has done good service to visitors to the Engadine by preparing a new edition of Dr. Ludwig's excellent local 'Guide to Pontresina.' It is furnished with an admirable map of the Bernina group.

Herr Ivan von Tschudi republishes his wonderfully compact German 'Tourist' with corrections and additions.

PROCEEDINGS OF THE ALPINE CLUB.

May 6, 1879.—Mr. C. E. MATHEWS, President, in the chair. The following were elected members of the Club: Rev. W. WILKS, Messrs. J. MEURER, J. BRYCE, D.C.L., A. SLOMAN, Marquis A. DE PALLAVICINI, and Dr. BRUNO WAGNER.

The President announced that, in response to his invitation, many of the artist members of the Club had expressed their willingness to contribute works of art to the Club-rooms.

Mr. J. OAKLEY MAUND read a paper on 'A route over the Bietschhorn,' and Mr. H. S. HOARE one on 'The first ascent of Mont Maudit.' A short discussion followed, in which Messrs. LESLIE STEPHEN, DENT, HARTLEY and MATHEWS took part.

June 3, 1879.—Mr. C. E. MATHEWS, President, in the chair. M. OTTO SCHÜCK was elected a member of the Club.

A vote of thanks to Mr. W. E. DAVIDSON, for the able way in which he had discharged the duties of Honorary Secretary during Mr. DENT's absence, proposed by Mr. DENT, and seconded by Mr. WALLROTH, was carried unanimously.

Mr. JAMES ECCLES read a paper on 'The Rocky Mountain Region of Wyoming and Idaho,' illustrating his subject by maps and photographs.

In the discussion that ensued, Mr. W. MATHEWS remarked on the difference in glaciation between the Alps and Rocky Mountains, and mentioned some concentric moraines in Scotland similar in formation to those noticed by Mr. ECCLES. In answer to inquiries about the difficulties of travelling in the Rocky Mountain region, Mr. ECCLES stated that the chief troubles he experienced were those of transport and provisioning.

Messrs. BARLOW, HEELIS, and C. E. MATHEWS also joined in the discussion; the latter congratulating the Club on having heard a paper of great interest and somewhat out of the usual line.

June 17, 1879.—The Annual Summer Dinner took place at the Ship Hotel, Greenwich, when fifty-four members and their friends sat down. Mr. C. E. MATHEWS, President, in the chair. Among the guests were Count STROGANOFF, Mr. ALBERT BIERSTADT, Admiral RYDER, &c.

THE
ALPINE JOURNAL.

NOVEMBER 1879.

AN ASCENT OF MONT MAUDIT. By H. SEYMOUR HOARE.
Read before the Alpine Club, May 6, 1879.

BEFORE describing the first ascent of Mont Maudit, I ought, perhaps, to say a few words as to the history of the name and how it came to be confined to the secondary summit which now bears it. A hundred years ago anyone who mentioned 'le Mont Maudit' would probably have been supposed to speak of Mont Blanc itself. He would have been thought only a little behind the fashion of the time, which was learning to admire the great mountain, and no longer found it good manners to speak of it, like the English bishop of the previous century, as 'the hill called Maudit, or Cursed.' It therefore put aside the peasants' name of 'Les Monts Maudits' as the principal title of the great Alpine mountain, and confined it to the neighbouring but secondary summits, rising between it and the head of Glacier du Géant, and finally to the peak whose ascent I am about to describe—the Mont Maudit of modern maps and travellers, 14,668 * feet. The slopes of this peak had been often traversed by explorers seeking a way to Mont Blanc, but we have satisfied ourselves by careful inquiry that, previous to our ascent, no one had been within several hundred feet of the summit.

We decided to spend the night of September 11 at the Grands Mulets, and started for that 'machine infernale,' as a friend of ours expressively calls the hut, about 11 A.M., in glorious weather. A friend bound for Mont Blanc, and accompanied by Peter Anderegg and a Chamonix porter, was to start with us.

* By an error, which had its origin in the substitution during the engraving of a 7 for a 4 in Mieulet's map, its height has been sometimes exaggerated.

The fact of my friend not being a member of the Alpine Club enabled us to render him a service before starting, as there was a difficulty about getting a Chamonix porter to accompany a traveller up Mont Blanc with only one guide, and that an Oberlander. Davidson, however, was equal to the occasion, and sought an interview with the guide-chef in the inner penetralia of his bureau. I would I could reproduce his exact French, but for want of the power, I may state that it was to the effect that our friend, it is true, was not a member of the Alpine Club, but that the two who now had the honour of speaking with him were humble members of that Society, and were to be on the mountain the same day as the gentleman on whose behalf they had sought the interview, who did not wish to be overburdened with the regulation number of guides and porters. The guide-chef was amenable, and there shortly appeared at Couttet's hotel the stalwart youth with the generic name aforesaid. I am told that the next afternoon, after repeated discharges of heavy pieces of ordnance from Couttet's garden, our friend at the bureau on hearing an unusually loud one, inquired what it meant; on being told that a Monsieur with an Oberland guide and a Chamonix porter had safely returned from Mont Blanc, he shook his head and began to think all was not quite right, but when some two or three hours later a second discharge was fired, and he was told that it was to celebrate the return of his two interviewers of the day before, there was tearing of hair in the 'bureau des guides.'

I am glad to be able to add that, owing in great measure to the exertions of the French Alpine Club, these obnoxious rules were abolished before the commencement of the present season.

But to return to the Maudit: we followed the oft-trodden route past the Pierre Pointue. The ascent of the glacier, below the Grands Mulets, was last year unusually easy. Whether it may have been owing to very heavy falls of snow in the winter and early spring, or to the fact that almost continuous bad weather in August must have prevented the usual number of pilgrimages made in that month to the Grands Mulets and even higher, by the bulky tourists of various nationalities, certain it is that the surface of the glacier was more even this year than usual, and the snow bridges over the crevasses more numerous and more consistent than I have ever known them. Owing to this state of things we were enabled to wander about much as we liked, and unroped as far as the hut, a style of proceeding which exactly suited

Jaun.* The Chamonix porter flitted about uneasily, and no doubt thought a great deal, but deferred what he had to say until our arrival at the cabane, where he lectured us seriously on the pace at which we had come from the Pierre Pointue, which he said was far too fast. We received his lecture with derision, being much elated at finding no other parties established at the Grands Mulets, and at the prospect of having it to ourselves for the night. Having dined, and flashed signals down to the valley below for the benefit of our friends at Couttet's, we turned in for the night. We were called shortly before 1 A.M., and looked out on a not very promising morning.

At 1.50 A.M. we were under way, and commenced the well-known laborious grind up to the Grand Plateau; the darkness of the night was aggravated by a dense mist, through which we plodded on. I was in the condition known as three parts asleep when a certain amount of excitement was infused into the two parties by a suggestion from someone that we were not on the right route. Not having taken the slightest interest in our route since leaving the Grands Mulets, I did not feel competent to give an opinion, but began searching in the knapsacks for a certain bottle of Marsala I knew of. I believe we had reached somewhere about the point where Chamonix guides are wont to inform the party under their charge that here travellers ordinarily partake of their first meat lozenge. Though it was only between 3 and 4 A.M. I found the wine-can an excellent substitute for the more conventional lozenge, and having started the bottle my example was soon followed by the rest of the party. This, however, did not solve the question of whether we were on the right route or not. It was carried unanimously that we were somewhere near the summit of the Petit Plateau; the Chamonix porter did not feel competent to fix our locality more exactly, and there were no visible tracks of former ascents to guide us. I heard Jaun talking mistily at the other end of the rope about some crevasses which would enable him to fix our whereabouts if he could only see them; but the upshot of it all was that we had to spend half an hour on the Petit Plateau in a dense fog, waiting for the arrival of the sun. I am told that to make a very early start

* This season a roped party narrowly escaped an accident on this part of the glacier. A bridge gave way, and three out of the five went into the crevasse, whence they were extricated with some difficulty. The bridge was one which had been in constant use, and was therefore probably trusted without examination.—EDITOR.

is one of the cardinal virtues of mountaineering; truly in this particular instance virtue did not bring its own reward.

But it is soon sufficiently light to proceed, and we push on to the Grand Plateau, where we separate, my friend with Peter Anderegg and the Chamonix porter going to the right to ascend Mont Blanc by the Bosse, while our way is to the left towards the Corridor. The snow is deep and rather loose on the tedious slope, or rather ravine, which culminates in the Col de la Brenva, 14,111 feet, the highest point of the Corridor. The summit of Mont Blanc seems strangely near us on the right, but, as my friend, Mr. Schutz Wilson, has observed of the slopes above the Corridor on another occasion, the sun is shining dimly on dull green ice, which looks like hard work for the guides when we come to attack the Mur de la Côte later on. But our work lies to the left, and just above us is a nicely rounded snow summit, which I fondly imagine is our peak. I need hardly observe that my pet peak was not the summit of the Maudit, Von Bergen, observing grimly that that was 'weiter oben,' an expression which from an Oberlander may mean anything from one hour to a whole day's work. Just below the summit of the Corridor the guides deposit their knapsacks, and we turn to the left. At this part of our route we found the greatest care to be necessary, as an enormous cornice overhung the Brenva Glacier, and obliged us to keep well away from the Italian side. My previous experience in cornices had been confined rather to such as could be cut away by the powerful arm of a Lauener or an Anderegg, but this one was of a different calibre, for that grandest of all Alpine glaciers the Brenva disdains to culminate otherwise than in an imposing and substantial canopy. A loud crack under our very feet warns us to keep still more to the left, and startles even the imperturbable Jaun into suggesting a slight descent. We are soon on firmer ground, and see that there is no particular difficulty likely to stop us in the ascent of the final peak. This proved to be the case; the final slope leading up to some convenient rocks just below the summit is very steep and hard ice, but the rocks are good, and in $1\frac{1}{2}$ hour from the Corridor we reach the summit of Mont Maudit, the height of which is correctly given by M. Charles Durier in his recent work upon Mont Blanc, as 4,471 mètres, just 1,200 feet lower than the highest mountain in Western Europe, and nearly on a level with the top of the Mur de la Côte. The view over the whole Mont Blanc district, especially towards the north-east, is magnificent. We look towards the Dru, but powerful field-glasses reveal nothing of the feats of rock climbing which must be

performed there. To the south-west is Mont Blanc, whose somewhat clumsily-shaped and rounded summit does not gain by comparison with gracefully tapering and spire-like Aiguilles. We build a small cairn, which Von Bergen further ornaments with a huge red pocket-handkerchief, and soon after 8.30 we commence the descent. The Corridor is quickly regained, and we turn our attention to Mont Blanc, the ascent of which today we find means continuous step-cutting from the foot of the Mur de la Côte to the summit. However, we relieve Von Bergen of his pack, and his axe is soon at work. After a very monotonous climb we spend but a few minutes on the summit of Mont Blanc, as we had intended to descend to the Pavillon de Bellevue by the Dôme du Gouter and the Aiguille du Gouter; but just before it would have been necessary for us to leave the ordinary route of descent to the Grands Mulets, I was beguiled into a glissade down a slope, which, though the guides declared it to be snow, I know for a fact was hard ice. Anyhow, I managed to lose my footing and fell, cutting two fingers of my left hand to the bone. This mishap decided us to abandon our original plan, and we accordingly descended to the Grands Mulets, the snow on the descent being in an abominably loose and treacherous condition.

At 3.45 we again left the hut, Davidson and I preceding the guides by several minutes. There were three or four parties on the Glacier des Bossons, under the charge of Chamonix guides; we had stopped to speak to one of them when a strange noise was heard above our heads, and on looking up we were aware of two falling bodies coming right at us — they were none other than Jaun and Von Bergen—who, seeing us some distance below them, and being determined to rejoin us, had chosen the most direct way by simply glissading straight down the glacier. The pious horror of the Chamonix guides as the Oberlanders shot past them was a sight to witness, and only increased Von Bergen's determination to show them how they managed those things in Switzerland. He finished up by shooting straight down an ice-slope, pulling himself up at the bottom on the brink of an enormous crevasse. It took him some time to extricate himself from this predicament, and he did not rejoin us until some distance lower down, not having gained much by this last piece of audacity. I will hurry over the remaining portion of the descent, as we did on this occasion, our haste enabling us to reach Couttet's hotel in time for the *table d'hôte*, and in 1½ hour after leaving the Grands Mulets.

In conclusion, let me recommend the Mont Maudit to anyone

who may find himself on the Corridor, and may wish to gain a more extended view over the range by a climb less monotonous and far less fatiguing than the ascent of Mont Blanc by the Mur de la Côte.

AN ASCENT OF ARARAT. By G. PERCIVAL BAKER.*

TRAVELLING last year with my father through Persia and the Caucasus, we arrived at Tabreez, and there, in concert with two friends, arranged to attempt the ascent of Ararat. With some difficulty we managed to get made some rough alpenstocks, and providing ourselves with small hatchets and very large thick felted socks (which we put over our boots when the footing was slippery, and transferred to our hands when protection for them became necessary whilst we were clambering amongst boulders), we journeyed on to Kumarlu, a junction post-house on the military road of Armenia, between Tabreez and Erivan, whence the base of Ararat is distant about 35 versts, where we arrived on September 3. We set to work at once to secure a guide and horses, and to obtain what information we could about the mountain, so as to judge of the probabilities of success. We heard the same objections to the attempt as we did at Tabreez; but these were mainly repetitions of the well-worn tradition that no mortal could ever reach the top. The old Armenian post-house official, full of prejudice and superstition, was especially foremost in denouncing it most strongly as an impossibility. For guide, one Boghos, of most honourable repute (which we afterwards found was far from merited), was engaged, and he managed to find us horses, a matter of very great difficulty, as they were out on the plains at harvest work.

The next morning (September 4) we started again, and passing through the village to the right of the post-house, we turned a sharp corner to the left, and entered a track leading to the Araxes river, which we were obliged to ford, and after going through a bog of reeds, we had in view, some 3 versts to the S. W., Aralyk, the Cossack station, and the starting-point

* The following account of an ascent of Ararat seems worthy of insertion, even after Mr. Bryce's recent narrative, as it shows that the mountain is accessible to any traveller with good legs and pluck, and also what risks are run in the descent by such travellers, if they are not mountaineers. Half the climbers of Ararat have come down it faster than they intended, and it is more from good fortune than anything else that they have all come down alive.—EDITOR.

for the ascent. Our interpreter, Georome Realimi (whom Valentine Baker made famous in 'Clouds in the East,' and George Forbes in the 'Times' during the late campaign), was sent in advance with our cards, as we had omitted to provide ourselves with letters of introduction to the commanding officer at this station, and when we arrived we were most hospitably received, the Colonel entertaining us at mess, and the Major placing his bedroom at our disposal, and offering us all possible assistance for our enterprise. The first step towards our arrangements was to go on the roof and view the mountain, and hear what the officers had to say on the route to be taken. They all insisted that the ascent ought to be made from the south end of the chasm opposite; but this seemed an impossibility, for the course appeared to be up a series of perpendicular walls, capped by a long cornice of ice, some 80 feet thick. The air was so clear that distance was very deceptive, the mountain appearing but 4 versts distant, when in reality 25 versts away. My father was much inclined to try the northern side, where the slope is more gradual and terraced, in spite of its being long and tedious; but before coming to a decision, at the suggestion of the Major, we sent for an Armenian, Sirkis Simonovitch by name, from a village at the foot of the northern slope, and some 20 versts away, who had accompanied a 'Nemsa' (German) party some twelve years previously in an ascent of the mountain. He turned up towards evening, a worthy old patriarch of about seventy years, displaying on his breast as a proof of his ascent a large silver medal of some Russian order of merit, having on one side the bust of the Emperor Nicholas, and on the other his own name. From him we gathered that we must make for Sardarbular, in the pass between Great and Little Ararat, but as to our prospects of success he could say nothing beyond 'Allah belier'—'if Allah wills it.' By eventide all arrangements were complete for starting on the morrow. Provisions were secured, with a skin of vodka for the Cossacks (of whom we were to have twenty as an escort), and by the kindness of the Major we were provided with good artillery horses, in lieu of the more doubtful animals which Boghos had obtained at Kumarlu for us, the latter being returned to their owners.

We were up early the next morning (September 5) expecting to find our party ready to proceed; but our easy-going Russian friends were not to be hurried, and it was nine o'clock before our cavalcade got under weigh, the regiment being paraded to witness our departure. We mustered in all thirty horses, including the five pack-horses loaded with the provisions,

fuel, &c., and the camp wolf dogs followed; the Cossacks were fully equipped, and some armed with the Winchester repeater rifles taken from the Turks in the late war.

Our course was westerly, gradually ascending toward Aghuri, 'the stable,' a small pastured spot on one of the numerous hills (which in the distance look like so many buttresses to the mountain) and near the Great Chasm. Here were pointed out the stumps of the trees marking the site of the old village, and the ruined monastery in a hollow, destroyed by the earthquake of 1848. Halting shortly before midday at the stream which flows from the supposed glacier in the chasm, we purchased a sheep for about five shillings, killed it on the spot, and on arrival at the village a little higher up, regaled ourselves with soup and 'kabobs.' The easy mode of travelling adopted by our friends made us impatient; however, by 2 P.M. we proceeded on our way along the mountain side S.S.E. towards the neck of the Takjaltu (the largest of the before-mentioned buttresses), some 7,500 feet above sea level, and as we pursued our way over the ridges there was plenty of part-ridge shooting.

Our route became now steeper, and rounding the mountain to the right—with Aralyk almost out of view—we had in sight, some distance to W., the pass, with its sloping green plain stretching a mile from the foot of Little Ararat, on our left, to the ridges of the Greater Ararat, on our right. At this point the Major deemed it advisable to send in advance our Armenian patriarchal guide, to inform the Kurds encamped on the slopes ahead of us of the object of our visit, and to request them to provide fodder for the horses. The effect upon this tribe of such a cavalcade, without previous notice of our peaceful intentions, might have frightened them away, so we were told, as they acknowledge no government, and make this junction of the three frontiers a convenience for avoiding payment of taxes. We waited some time on this rough path to the plain to examine a number of trenches some 7 feet deep, at that season of the year deserted, but in winter covered with boughs, and used by the Kurds as refuges for themselves and cattle. It was only towards sunset that we advanced again, arriving soon after at Sardarbular ('the fountain, or spring, of the sardar, or general'), where we found the Kurds very anxious to persuade us to go on farther, telling us that they could not supply our wants, but evidently fearing that there was more in our expedition than an ascent of Ararat. Giving them to understand, however, that our intentions were firm, and inducing them by offers of 'backsheesh' to provide what

we needed, our bivouac was fixed some 30 yards above the spring, and without any bustle, and with all the appearance of everyday life, the quiet Cossacks very soon had a good broth prepared, with the usual tea beverage to follow. The Kurds, being pacified, brought from the valley below a good store of hay, very thin flat bread-by-the-yard, butter, cheese, and thick sour milk, a capital and cooling beverage in hot weather, which we scarcely relished however under these circumstances. By 9 P.M. we all turned in, leaving five Cossacks patrolling the camp, guard being relieved every two hours; the fire was kept up all night, dried dung in cakes being used as fuel. The scene was extremely picturesque as we lay in groups on the ground, the camp-fire burning in our midst, and the snow-capped cone standing out boldly in the brilliant moonlight. The Colonel at the station had been kind enough to lend my father a grand fur-lined cloak with a hood, but had forgotten that he was unaccustomed to vermin, which turned out *en masse* to do justice to the stranger, and the consequence to him was a very restless night.

As usual, there was no getting the Major to move off early the next morning (September 6). The Yevash! Yevash! system of the Turk was as prevalent on this side of Ararat as on the other; however, it gave us an opportunity of rambling about and making such observations as give life to a trip of this kind—for instance, we had a stroll down to the spring, where we were much amused by a display of coquetry on the part of a Rebekka, the only drawback being that she spoke an unknown tongue, and then we had a display of very business-like qualities on the part of the male members of the tribe, who made us pay dearly for some tent-rugs, such as are used in the West as *portières*, and socks which we purchased of them, and charged us double price for our second sheep. About ten o'clock the horses for the climbing party were saddled, and orders having been given to the Cossacks who were to remain and protect our camp, we proceeded on our way, taking only four Cossacks with us. Our Armenian guide led us to the N.W. corner of the plain, and then, following the course upwards of the then dried-up stream, we crossed many hills and dales, and by 12.30 decided to give up the horses and proceed on foot. By 1.30 P.M. we had reached a height of about 9,000 feet, and entered a pastured hollow, the head of which, to the left of the stream, was bounded by a precipitous mountain stretching across this side from S.W. to E. Up this I climbed—whilst my friends were searching for a spring—starting from a plain to the left of that

we were in, and from the top had a grand and commanding view. Bayazid was to be seen to the S.W., with the infant Euphrates taking a serpentine course past it; the Little Ararat, in perfect conical shape, was to S.E., with its streaky grey lines running from top to bottom, and below in the hollow was a perfect volcanic crater. Here I was able to signal to my friends; and after a scramble of an hour over these rough boulders I returned by 4 P.M. The spring had been discovered on the left side of the water-course, and very near the gorge leading to the second small valley just mentioned. All preparations, much to my astonishment, were being made for our second night's bivouac, and I protested strongly against this, knowing well the task laid out for the morrow would be certain failure from so low a height. We decided therefore to start at once, with the Armenian and two Cossacks to carry provisions and my father's coverings, leaving behind the Major and Georome to follow later with partridges, which they were then cooking.

Crossing the water-course we struck in a N.E. direction for the first ridge. Climbing soon became very laborious, though not dangerous, especially on account of the heavy burdens which we had corded tightly to our shoulders. The spur gained, we continued on its other side, with another ridge running parallel to us, and beyond yet another and the last—a castellated one, which runs in a gradual and long slope from its 'keep' or projecting spur, Tash Killissa, to the S.E. side of the pass. On this second ridge, at a point perhaps some 12,000 feet high, with a fast setting sun, we found a sheltered nook, some 6 feet long by 5 feet wide, with a rock bottom, and protected on three sides by rocks some few feet high. We had had the usual daily shower, and this, with the intense cold as the sun waned, made one shiver at the sight of a cold stone bed. However, the best was made of the occasion by spreading out our macintoshes, yorgans (cotton-wool quilted counterpanes), and yapangees (a clodded goat-hair Cossack cloak) to sleep upon, and, feeding on 'Liebig,' with a few biscuits, we four laid down together, being tightly wedged in this small space, and having all to turn at the same time.

We were astir by four o'clock the next morning (September 7), having had very little sleep, and, as I expected, the Major and Georome with the partridges had not put in an appearance. We accordingly started without them, and leaving our Cossacks to take care of the coverings we were again following the Armenian up the ridge straight against the cone. At eight o'clock my father, one of my Tabreez friends, and the Armenian guide, showed such signs of fatigue that my

friend T—— and I decided to push ahead by ourselves, and by eleven o'clock we reached the last terrace, with a slight hollow (the lowest part of which was covered with hard snow) between us and the rockway at the foot of the actual cone. The length of this terrace from E. to W. was about $\frac{3}{4}$ of a mile, and as it is at the bottom of the 4,000 feet of snow slope, which here takes a turn westerly, it seems to me very probable that, after a few cold seasons, it would become a perfect glacier.

After crossing this bed of snow to gain the rockway, we found ourselves climbing at an angle of from 30 to 35 degrees, and progress was very slow, for we had to put our thick socks on our hands and scramble on all-fours over immense boulders. At 1.30 P.M. we could just distinguish our party below crossing the ice-slope at the foot of the rockway, and making for the projecting spur or peak ('Tash Killissa'); they had evidently given up the attempt for the summit, and were now endeavouring to reach the most commanding position on this side of the mountain for a view of Ararat plain, extending from Erivan to Djulfa, on the Persian frontier. Resuming our course with a 'yohla' ('en route') from my friend, we had on our right the steep frozen snow-slope, with a precipice on our left, and Little Ararat opposite we now overlooked. Our way became more perilous, the rocks being so large that with great difficulty we scrambled over them. The rarity of the air also began to affect us, and we had to make frequent stoppages to take breath; but T——'s happy 'yohla' spurred us on to further exertion. When we reached the junction of this rockway with another which starts from the S.W., the precipice being between the two, we came upon a piece of wood, 6 feet long by 3 inches thick, fixed tightly in a rock, and then, some little distance away, another piece, about $2\frac{1}{2}$ feet long, with a nail driven through it and a tin plate in the centre. We saw that the two pieces had formed a cross, and accordingly nailed them again into position. Names had been cut out upon the cross-piece, but had been effaced by the weather. The way from this point was in some places wholly covered for a few yards with the frozen snow, in which we had consequently to cut steps, and were obliged to exercise great care in our progress. As it was now nearly 4 P.M. I began to feel somewhat discouraged, but my friend cheered me up by assuring me that he could see that six more rests would take us to the top, although when these six rests were done we had still in reality some three times six to follow. Nearing the summit, we came to a great deal of loose stone, or 'screes,' which, though far from difficult, was tedious work, as at every third step up we would

slip down one, sometimes floundering and fearing that we should come down altogether with a rush. This is the place said by tradition to be on fire, on account of the sulphurous vapours which are said to be sometimes observed there. We, however, noticed nothing of the kind. After passing the 'screes' we had more step cutting to a rock jutting out above us, and then, scrambling on all-fours over this, we were at last, at 5 P.M., on the top of Ararat, at the south-east side, and about 17,000 feet above sea-level.

The weather was very bright, and we could see very plainly the whole extent of this summit, which seemed to be about 300 yards by 250 yards. The rarity of the air no longer inconvenienced us; the wind was blowing a gale from the west, streaking in lines the hard snow top some inches deep, and we thought it prudent to attach ourselves to each other by the rope. Looking with the glass towards the south, we could just distinguish on the plain our pack of horses, which appeared as a small speck. We were unable to distinguish any one mountain from another, but beyond Little Ararat could be seen an expanse of water, surrounded with abrupt peaks, evidently Lake Urumia and the salt plain by Tabreez. There was a slight depression or valley on the top of the mountain, and this we crossed to the N.W., to see which was the higher point, our opinion being that the preference must be given to the S.E. side. The view on this side into Turkey was very indistinct, but we imagined we could make out Kars, Bingol Dagh, Kirzil Tépé, and other places famed since the war. Nearer to the N., Ala Guz, a three-peaked volcano, was prominent, and to the right of it Lake Gotcha. The terraced slope on the northern side appeared to extend gradually downwards for many miles to the plain, and seemed from our point of view to be a comparatively easy, though long, route for the ascent.

Recrossing the summit without a word, and pondering much on the difficulties of the descent that lay before us, but little of the day remaining for its accomplishment, we reached the ridge, and with a 'yohla' started downwards. Instead, however, of steadily retracing our route down the steps we had cut, T—— proposed sliding down the bare slopes on the rock-way, and prepared at once, by putting his alpenstock between his legs to act as a break, to adopt this mode of descent down one of these slopes some few yards long. I condemned this proceeding very strongly, as I feared he would not have sufficient control over his course; but he was not to be dissuaded, and away he started. He worked his way downwards fairly enough

for a short distance, but then, unfortunately, the formation of the slope becoming somewhat irregular, he was carried too far to the left, and the impetus he had then acquired depriving him of his steering power, he was unable to get back. In another minute he lost his equilibrium and his alpenstock, and, rolling and pitching over and over, was soon lost to view. I made all possible haste over the 'névé' to the 'scree,' which I cleared in a few minutes, and then a short glissade, which, however, lost me my alpenstock also, brought me to the rock-point I was making for with a nasty bump. Scarcely daring to hope that I should find any traces of my friend till I reached the bottom of the 4,000 feet of slope, for I knew of nothing to arrest his downward course, and, horrified at the shocking accident, which I feared could only have a fatal result, I pressed on recklessly till I reached some projecting boulders which had obstructed my farther view of his progress, and there, to my great joy, was my friend some sixty paces off, and still alive! The poor fellow, with what little consciousness remained to him, was holding on to some broken frozen snow, which, fortunately for him, had checked his descent; but death stared him in the face, for a slip of a few feet farther would take him again on to the smooth surface, with still 2,500 feet fall before him. As he did not speak, and appeared unable to move towards me, I hastened to put my socks again over my boots, and with my hatchet carefully cut my way to him, and was thoroughly exhausted when I reached him, as each of the sixty steps required five hard cuts before the least footing was available. The poor fellow was in a most pitiable condition, and another 1,000 feet would no doubt have killed him outright; his hands and arms were much cut, the heels of his boots were torn away, and his feet were bleeding; he was bruised from head to foot, and shivering with cold, and all I could get from him was that he wished he were dead. Fortunately, although his flask was broken, the leather covering kept the glass together, and preserved just sufficient brandy to rouse him for the exertion necessary to regain a place of comparative safety.

Our return to the rocky ridge necessitated very great care; but beyond the loss of my pocket-book, which I much regretted, it was accomplished without accident, and our sense of thankfulness was great when we again had a firm footing. It was now about 6.30 P.M., with the sun fast setting, and we were 15,500 feet high; however, with socks on our hands, we pressed on, not as fast as I should have wished, as T——'s right hand was useless, and he had to do all scrambling over rocks with his left hand only. By 8.30 P.M. we were down at the foot of the

cone; and as long as Little Ararat was in view, with the moon to determine our bearings, we hoped we should get down to our friends that night. About 11 P.M., when we were both suffering great thirst, we heard some water trickling, apparently some little distance below, and made for it, climbing with the greatest difficulty over the boulders. These in the moonlight were very ugly and deceptive, their shadows often appearing to be rocks themselves, and causing us in consequence many awkward falls. Down we went, plodding our way over this rough ground for three quarters of an hour, the sound of the water still being heard tantalisingly ahead of us, till we found we had strayed into a small valley, enclosed on all sides, with no outlet below, and, worst of all, the water we had been pursuing could not, when we found it, be reached by hand between the rocks. In a despondent state we climbed out of this place, and endeavoured in vain to regain our route, struggling all the while against an almost overpowering desire for sleep; but now the moon went down, leaving us in total darkness. At length, thoroughly tired out and disheartened, we crept into a small recess formed by overhanging boulders, intending to sleep till sunrise; but the pain of T——'s cuts and bruises deprived him of any chance of sleep, and the intense cold soon obliged us to rouse ourselves and take some little exercise to keep up the circulation. In this way, half awake and half asleep, we passed the dreary intervening hours until we were gladdened by the sight of the brilliant morning star, by the light of which we managed to advance a little, and between 4 and 5 o'clock the day began to break.

With what joy we hailed the return of daylight, especially when it revealed to us the cheering fact that we were in the direct line for the pass! With renewed energy we proceeded on our way, and a little later on we came across the track our friends had taken the previous day, leading along the bed of the dried-up stream to the spring before mentioned. This course we carefully followed, and by 8 A.M. had the pleasure of rejoining our companions, whom we found in a state of great anxiety on our account, and at that very moment preparing to detach a party in search of us. After satisfying our Armenian guide, by our descriptions of the route we had taken, that we had really been to the top, we were warmly congratulated by the Major on our success, and then were glad enough to find a good breakfast ready for us, to which we did ample justice, having been without food for twenty-eight hours. Resuming our course downwards towards Sardarbular, we reached that place about 1 o'clock, and there had to settle accounts with the

Kurds for the provisions and fodder which they had supplied to us. Here we all remounted our horses, and, guided by a Kurd, rode in an easterly direction to a Cossack station called Bouroulan (where the most of the water flowing through the rocks on this side of Ararat seems to collect and swamp the district), and thence, after a short halt, we returned to Aralyk, our starting point of September 4, T— and I having been plodding along without sleep for forty hours.

Our Russian friends were again most hospitable in their treatment of us, and we took our leave of them the next day with many expressions of mutual regret.

BORDIER'S 'VOYAGE AUX GLACIÈRES.'

The Alpine Club has been fortunate in securing a copy of that very rare work, M. Bordier's 'Voyage Pittoresque aux Glacières de Savoye,' printed at Geneva in 1773. Professor Tyndall, in his 'Forms of Water,' has called attention to this acute and ingenious observer's claims as a forerunner alike of Rendu and Forbes. We shall best aid to do them justice by reprinting here his chapters on a glacier theory, adding a short extract which curiously anticipates the method of modern observers. The remainder of the book is a lively description of a journey by Martigny and the Tête Noire to Chamonix, and the return by Sallanches. The descriptive powers of the author fully justify the epithet used in his title-page. His pictures are drawn direct from nature and still give pleasure. Geneva as it was a hundred years ago—the Geneva of Voltaire and Rousseau—with its forts and bastions, presenting the aspect of a 'ville de guerre,' is vividly placed before us in his pages. To the modern reader, familiar with Professor Ruskin's eloquent chapter on Mountain Gloom, it is amusing to find the 'Bonheur' of the inhabitants of Valorsine specially celebrated, and their lives described as worthy of Arcadia—

Hypothèse sur les différents phénomènes des Glacières réduits à un seul principe.

' Il est tems maintenant de considérer tous ces objets avec les yeux de la Raison, & d'abord d'étudier la marche & la position des Glacières, & de chercher la solution des principaux Phénomènes qu'elles présentent. Au premier aspect des Monts de glace une observation s'offrit à moi, & elle me parut suffire à tout. C'est que la Masse entière des Glaces est liée ensemble, & pèse l'une sur l'autre de haut en bas à la manière des Fluides. Considérons donc l'assemblage des glaces non point comme une masse entièrement dure & immobile, mais comme un amas de matière coagulée, ou comme de la cire amollie, flexible & ductile jusqu'à un certain point; supposons ensuite que les sommités du Mont Blanc, point le plus élevé des environs, se soient trouvées couvertes de glace, & voyons ce qui aura dû en résulter.

' 1°. Les glaces partant de ce point de réunion, and pesant de haut en bas, se seront nécessairement déchargées dans toutes les Vallées à portée ; ainsi la grande Vallée située derrière le Dru sera devenue un vaste Lac de glace, environnant les pointes des Rochers, & partagé en plusieurs colonnes, selon les obstacles qui se seront trouvés à son passage.

' 2°. Ce Lac de glace suspendu en l'air entre les Montagnes, à la hauteur de plus de 2000 pieds, comme une liqueur contenue dans son Vase, aura dû verser dans le plat pays par toutes les fentes qui se seront trouvées dans ces Montagnes ; de pareilles fentes se rencontrent au Montanvert, à Argentière ; aussi les Glaces s'échappent elles par ces ouvertures, & tombent au bas de la Vallée, chassées par celles du haut, & produisent les Glaciers.

' 3°. ' Ainsi s'explique un fait assez curieux. L'on voit quelquefois de riches Moissons, & des vastes Forêts situées sur un terrain plus élevé que les Glaces mêmes ; la raison en est simple, ces campagnes sont préservées de leur irruption par des Montagnes qui sont au dessus d'elles ; les Glaces ne se précipitent que par les ouvertures, & tombent en droite ligne dans le bas.

' 4°. Notre hypothèse rendra encore raison des ondes énormes de Glace, élevées les unes sur les autres, & du phénomène surprenant des glaces croissant de bas en haut, à la manière des végétaux ; ce fait est aussi certain qu'il est difficile à expliquer ; on ne peut contester à tous les habitans du Pays des observations suivies, sur lesquelles ils s'accordent unanimement, & que celles de Suisse confirment. Toute la Glacière, disent-ils, a un certain mouvement. Les fentes se ferment & se rouvrent. Les pierres portées par la glace montent & baissent. Les corps des malheureux chasseurs, précipités dans les fentes, sont revomis quelques jours après sains & entiers sur les ondes de glace ; ce qui ne peut arriver que lorsque les fentes venant à se fermer les élèvent avec l'eau caillée. Les Paysans ne sont point embarrassés à trouver une explication ; ils ont recours à une végétation pure & simple ; les glaces croissent dans leur pays, disent-ils, comme les arbres & les plantes croissent dans les autres, & cela arrive depuis que quelques mauvais esprits eurent jeté un sort sur leur Canton. Un observateur a cru que les eaux contenues sous la glace pouvoient soulever la masse entière du Glacier ; ce qui est absolument impossible. Il faut donc encore avoir recours ici à notre hypothèse ; on comprend qu'une violente pression supérieure peut élever ces grosses ondes dans les glaces qui sont amollies en gagnant la plaine, & leur donner même la force de pousser de grands rochers ; à peu près comme l'eau s'élève dans un jet d'eau poussée par celle qui la suit.

' 5°. Si notre explication est juste, il faut que le grand Lac de glace n'ait que peu ou point de ces grosses ondes végétantes, parce que la pression supérieure ne peut s'exercer dans une si grande étendue plate. C'est aussi ce qui arrive ; les monticules de glace y sont très-petites en comparaison de celles des Glaciers, & la surface beaucoup plus unie.

' 6°. Notre système expliquera encore les fentes nombreuses qui entrecoupent la glace, & la chute fréquente des glaçons. Nous avons vu que les fentes changeoient sans cesse, se fermoient & se rouvroient

sans tenir de règle certaine. La dilatation & le resserrement successifs de la glace, produits par la gelée & par le Soleil, la chute de l'eau fondue dans des fentes légères, où elle regèle la nuit, & chasse avec la plus grande force tout ce qui se présente (par la propriété qu'a la glace d'occuper un plus grand espace qu'une pareille quantité d'eau); le contact des glaces sur le sol qui les porte, qui fond leur surface inférieure, les détache, & les fait plier par leur propre poids, peuvent bien expliquer quelques-unes de ces fentes; mais il faut de plus y joindre l'action violente de la pression supérieure, successivement augmentée ou diminuée par l'augmentation des glaces dans les hauteurs. La glace se fend, les masses des bords se détachent de la même manière que plusieurs boules élastiques se touchant, si l'on heurte celle d'une extrémité, celle de l'extrémité opposée partira.

' 7°. L'on trouvera encore la raison de la direction des fentes & des ondes de la glace : elles sont toutes *en dessous*, & dans la partie foible de la glace; leur direction est latérale, coupant la Vallée glacée dans sa largeur & non dans sa longueur; & ce qui est plus remarquable, lorsque la Vallée de glace tourne derrière les Montagnes, les fentes tournent également, se présentant toujours en face du *débouché* du Glacier. Rien ne démontre mieux l'effort violent de la pression supérieure, & la tendance continuelle des glaces à verser dans le plat pays : les fentes & les ondes se dirigent vers l'embouchure du Glacier précisément comme les vagues d'un fleuve se jettent vers le courant, & non dans les côtés.

' 8°. Si notre hypothèse est vraie, il faut que les phénomènes dont nous avons parlé soient beaucoup plus marqués au Glacier des Bossons que dans tous les autres; parce que la pression supérieure y est beaucoup plus grande, étant immédiatement au pied du Mont Blanc, sur lequel il s'élève par un talus de glace de huit à neuf mille pieds. C'est aussi ce que le fait démontre; les fentes y sont plus fréquentes, les chutes de glace plus considérables, les rochers chassés sur les côtés plus grands & plus nombreux; les glaces poussent du fond avec une incroyable vigueur; nous avons vu qu'elles présentoient l'aspect d'un amas de tours, d'une élévation & d'une grosseur prodigieuse.

' Ce Glacier quoique le plus curieux de tous est le moins visité; il suffit pour cela que les premiers Anglois qui allèrent aux Glacières n'ayent point pensé à l'examiner; les paysans, qui sont des animaux d'habitude, en auront depuis lors dégoûté tous les voyageurs; ils ont leur petite liste d'endroits à visiter, dont ils ne se départiroient pas pour les plus pressantes sollicitations. C'est ainsi qu'un de nos guides nous disoit, dans un épanchement de cœur, qu'il n'auroit pas souffert que nous allassions au *Montanvert* sans marcher sur la glace, qu'il auroit plutôt pris le parti de nous y porter. C'est ainsi que lorsqu'on est arrivé au bas du Glacier, près d'une grosse pierre sous laquelle un homme en rampant peut trouver place, & qui sert quelquefois de lit aux chasseurs, ou d'asyle contre les orages, ils ont coutume de faire boire à la santé du Roi George, sans savoir qui est ce Roi George, ou sans s'informer si l'on est François ou Anglois. Le respect pour les usages anciens est universel dans les campagnes; c'est qu'il tient à la paresse d'esprit, & qu'elle y est plus grande que dans les villes.

‘ Nous avons vu comment un principe simple fournissoit une clé à laquelle venoient se réduire les différens points de vûe de toutes les Glacières, quelque diversifiés qu'ils pussent paroître. Une seule réflexion eût pu suffire pour démontrer sa solidité; c'est que les glaces descendent jusqu'au bas de la vallée de Chamouni. Or le froid n'y est certainement pas assez grand pendant une partie de l'année pour qu'elles puissent y subsister; effectivement elles fondent sans cesse, & forment plusieurs gros ruisseaux. Puis donc que les glaces sont toujours aussi avancées dans la plaine, & qu'elles n'y disparaissent jamais, il faut absolument que de nouvelles glaces prennent perpétuellement la place de celles qui se fondent, & par conséquent qu'elles soient poussées par celles d'en haut. On ne peut donc guères se refuser à cette étonnante vérité, que cette vaste étendue de glace dure & solide chemine d'une seule pièce, que les fentes qui l'entr'ouvrent sont les pas ou les sauts par lesquels elle marche, & tend vers le bas; que cet Océan singulier a aussi son flux périodique & réglé; & que telle onde de glace qui est actuellement au sommet du Mont Blanc, descendra insensiblement au bas de la Montagne, & arrivera à son tour au pied des Glacières. Là métamorphosée en eau elle courra par mille détours jusqu'à la Mer reculée; elle traversera les rochers, les solitudes, les vastes campagnes, les villes peuplées. Arrivée à la Mer les vents & le reflux la promèneront de plage en plage, elle descendra dans les profondeurs de l'Océan, elle remontera à sa surface, elle passera d'une partie du Monde dans l'autre: élevée enfin sur les ailes des vapeurs, par l'action du Soleil, elle sera agitée en l'air çà & là par les vents; elle y éprouvera les mêmes vicissitudes qu'elle aura éprouvées sur la terre & dans la Mer; jusqu'à ce qu'elle soit peut-être de nouveau arrêtée par les hauteurs du Mont Blanc, & métamorphosée en glace.’

De la question si les glaces augmentent ou diminuent ?

‘ On a souvent demandé si la masse des glaces augmentoit ou diminuoit. D'un côté, c'est une tradition constante que les anciens habitans de Chamouni alloient, dans six heures de tems, à Col Mayor ou Cormayeu, dans le Val d'Aoste, par une route que les glaces occupent maintenant derrière le Montanvert. D'un autre côté il est constant qu'une partie des glaces de Chamouni fondit en 1706; & lorsqu'on examine les rocs parallèles du Dru & du Montanvert, on y aperçoit des traces qui semblent indiquer que les glaces de la Vallée intermédiaire montoient autrefois beaucoup plus haut qu'elles ne font actuellement. On peut donc conclure de ces observations contraires que la proportion des Étés aux Hyvers, & des Hyvers aux Étés, variant continuellement, mais sans souffrir jamais de bien grandes altérations, la quantité des glaces doit subir le même sort; elle peut varier d'année en année, mais elle doit être assez uniforme en prenant plusieurs années à la fois. Ce qui l'augmente, c'est la longueur & l'humidité des Hyvers; ce qui la diminue, c'est la longueur & la sécheresse des Étés. Plus les neiges d'Hyver ont été considérables, plus aussi, d'après notre principe, elles descendent avant dans le plat pays, & par conséquent plus elles ont de facilité à fondre pendant les chaleurs de

l'Été, puisque c'est uniquement l'élévation du terrain qui les maintient en glace. Réciproquement plus les chaleurs de l'Été ont été longues & brûlantes, & ont diminué la quantité des glaces, plus aussi l'hiver suivant a de facilité à réparer cette perte, & à combler les espaces vuides. D'une part le simple aspect du Lac de glace & du Mont Blanc prouve clairement qu'aucun Été, quelque long and quelque ardent qu'il puisse être, n'a jamais pu, & ne pourra jamais détruire cet amas prodigieux de glaces entassées; & qu'à moins de quelque grande révolution dans la machine entière du Monde, du changement de place de l'Ecliptique, de la Mer couvrant successivement toutes les terres, de Volcans allumés sur les sommités du Mont Blanc &c., la masse de glaces qui couvre cette Montagne n'a jamais disparu dès la formation du Globe. D'une autre part le simple aspect de la vallée de Chamouni, de cette plaine fertile & parfaitement unie, prouve aussi clairement que depuis un grand nombre de siècles les glaces n'ont point endommagé la vallée, & passé les bornes qu'elles ont actuellement. Or cette vallée est immédiatement au pied du Mont Blanc, rien ne la met à l'abri de ses irruptions; la masse entière du mont pèse sur les campagnes fertiles, & sa pente rapide de douze mille pieds semble d'instant en instant prête à les combler de ses glaces. Si donc les glaces augmentoient sans cesse, combien de fois depuis plus de quatre mille ans auroient-elles dû engloutir cette Vallée! Cependant c'est ce qui n'arrive point. Le Glacier des Bossons, par où les glaces se dégorgent, a ses limites assignées, & ne les passe jamais. C'est que la nature elle-même a mis une impossibilité à ses progrès. Le sol de la vallée de Chamouni est trop bas, comme nous l'avons vu, pour que les glaces puissent s'y maintenir pendant la plus grande partie de l'année. À mesure donc que, se formant dans le haut elles pèsent vers le bas, & descendent dans la plaine, à mesure aussi elles y fondent; & plus il s'en forme, plus il s'en fond.

'Ainsi se résoud une objection assez spécieuse. On dit que puisque les Glacières ont pu se former, il faut que les neiges d'hiver l'ayent emporté sur la fonte d'Été; & que la même cause subsistant toujours doit les accroître sans cesse. Mais il est aisé de répondre que la simple élévation du terrain a formé les premières glaces. Que ces glaces accumulées sur les hauteurs ont dû peser vers le bas. Que cette pression a dû être proportionnée à la quantité des glaces. Qu'arrivées à une certaine profondeur, les glaces ont dû y fondre sans cesse. Que tout ce qui résulte de leur plus grande accumulation pendant l'hiver est une plus grande pression, une chute plus profonde dans la plaine, & par conséquent une plus grande fusion dans les Étés suivants. Qu'on a déterminé à quelle hauteur les glaces pouvoient subsister pendant toute l'année sur les Montagnes, savoir, à 2400 toises sous la ligne, & à 1500 ou 1600 dans nos climats; qu'il y a donc impossibilité physique à ce qu'elles envahissent jamais le plat pays.

'Tout ceci peut s'appliquer aux Glacières des différens pays. Il n'est pas impossible que quelque petit vallon très élevé, entouré de toutes parts de hautes montagnes, comme celui du Montanvert, ait été insensiblement comblé par les glaces; mais que l'assemblage entier des Glacières s'accroisse sans cesse en largeur & en hauteur, comme on

l'a dit, & s'empare des vallées fertiles, c'est ce qui est absolument impossible. Si cela arrivoit aux Glacières de Suisse & d'Italie, la même chose arriveroit aussi à celles de Suède & de Norwège, & aux Cordelières du Pérou; ce qui n'y arrive cependant point. Les rivières qui partent des glaces devroient augmenter sans cesse, à mesure que s'augmenteroient les réservoirs qui les produisent; ce qui n'arrive point non plus. Leur lit démontre qu'elles ont toujours été à peu près les mêmes, & sembleroit plutôt prouver leur diminution.

'On objecte des vallées entières englouties par les glaces. Mais ces faits sont-ils bien certains? Les glaces n'ont-elles point rendu d'un côté ce qu'elles ont envahi d'un autre? La chute accidentelle de quelques rochers ne leur a-t-elle point frayé un passage qui leur étoit fermé auparavant? Les observations n'ont-elles point été faites après une suite d'années humides? Enfin n'a-t-on pas des observations contraires? L'auteur ingénieux & profond des "Recherches sur le Baromètre appliqué à la mesure des hauteurs,"* ouvrage dans lequel on trouve des vtes sur une grande partie de la Physique, & un modèle de marche à suivre dans cette science, est monté à différentes reprises sur un vaste Glacier du Faucigni, où aucun Etre vivant n'avoit pénétré avant lui, sinon peut-être les Aigles du Pays; il y a trouvé dans son dernier voyage la surface entière des glaces moindre de plusieurs toises qu'il ne l'avoit trouvée précédemment. D'un autre côté l'Auteur de la "Description des Glacières de Suisse,"† qui défend vivement l'opinion de l'augmentation des glaces, allègue à ce sujet l'exemple des Glacières du Grindelwald, qui semble donner une conclusion précisément contraire. "Cet amas de glaces, dit l'Auteur, a envahi des Vallées. . . . On voit encore le sommet de Mélézes bien conservées sortir de dessous la glace. . . . Il fondit en entier en 1540. . . . Actuellement il est plus petit qu'il n'ait été depuis plusieurs siècles. . . . On voit à son extrémité un emplacement aride d'environ cent pas, qui paroît avoir été abandonné par les glaces." L'expérience vient donc encore à l'appui de nos raisonnements. Les glaces peuvent croître pendant plusieurs années de suite, sans qu'on soit en droit d'en rien conclure; un petit nombre d'Etés très chauds peut en fondre une grande quantité, & rétablir l'équilibre. Ainsi donc les paisibles habitans des montagnes peuvent vivre sans inquiétude, & ne point craindre de voir leur heureux pays englouti par l'Océan glacé qui pend au dessus de leur tête; & les habitans des pays éloignés n'ont point à craindre non plus que les Fleuves qui font leur vie & leur bonheur viennent jamais à tarir: que les réservoirs de la Nature se détruisent; que son Ouvrage ait le même sort que les Ouvrages des hommes, & que ce mobile du Système du Monde vienne à manquer avant que tous les autres manquent en même tems.'

'Il seroit à souhaiter qu'il y eût à Chamouni quelqu'un qui pût observer les Glacières pendant une suite d'années, & comparer leur marche & leurs vicissitudes avec les observations météorologiques; la

* M. de Luc.

† M. Bourrit.

position du Bourg seroit extrêmement commode pour cela; cependant l'on tire peu de lumières des habitans. Il faudroit marquer précisément quelles sont les bornes & l'aspect successifs des différents Glaciers? en quel tems ils s'avancent ou rétrogradent, & quelles sont les années les plus remarquables à ces deux égards? Il faudroit examiner quand les fentes & les chutes des glaçons sont plus considérables? Quelles altérations subissent les rivières qui découlent des Glaciers? Quelles sont les différentes hauteurs du Lac de glace? ce que l'on pourroit observer dans les rochers latéraux. Il faudroit essayer de placer des fardeaux sur les grosses ondes du Glacier des Bossons, & voir quand & comment ils seroient renversés? Il faudroit examiner si la glace étant *ilidoelectrique*, ces vastes monceaux de glace ne donneroient aucuns phénomènes dans les tempêtes, &c., &c.'

THE CONGRESS OF ALPINE CLUBS AT GENEVA.

THE International Congress or Conference of Alpine Clubs took place this year at Geneva, during the first four days of the month of August, and certainly no previous Alpine Congress has so well deserved to be called International.

The English Club was represented by its President, by Captain Marshall Hall, and by M. Henri Pasteur; the Swiss Club by its President, Herr Lindt, and by Freundler, De Saussure, Binet-Hentsch, Favre, and other well-known names; America sent Mr. Cross, of Boston; France, its President, M. Le Sénateur Xavier de Blanc, its Vice-President, M. Talbert, and the Marquis de Turenne, from the Direction Centrale; but many of the Sections were separately represented, the Society of the Tourists of Dauphiné mustering in especial force. Austria sent Herr Richter, Italy, Budden and Dalgas, and Spain, Señor Arabia y Solanas, of Barcelona.

The Conference was opened on Friday, August 1, in the beautiful rooms of the Société des Amis d'Instruction, under the Presidency of M. Albert Freundler, the retiring President of the Swiss Club; and after the election of the representatives of England, France, and America as Vice-Presidents, M. Freundler delivered an excellent speech, and the practical business of the Congress began.

The subjects which had been reserved for discussion were not of special interest to the members of the English Club. Many pertinent remarks were made on the question of 'The Improvement of Mountain Inns,'—a subject which might be considered with advantage by the Presidents of the Sections of Dauphiné and Tarentaise. 'The laws regulating mountain huts' would appear to be already sufficiently codified under the head of 'First come, first served.' 'The manner of the training and the examination of guides' offers an interesting study to the speculative Alpine philosopher; but the practical climber is apt to rely on the well-known principle of the 'survival of the fittest'; and 'collective action amongst Alpine Clubs, in order to obtain reduced fares in favour of Alpinists travelling in

groups,' suggests ideas which, notwithstanding the 'nature moutonnaïère' which the French ascribe to us, are at least, from an Alpine point of view, repugnant to the English mind.

The Conference lasted for two days, during which the ordinary proceedings were twice suspended to enable the audience to listen to addresses from M. Durier and M. Henri de Saussure. The former gave a graphic account of an exploration of Etna some months previous to the recent eruption, and the latter communicated some valuable and interesting information with regard to the first attempts to ascend Mont Blanc by his eminent grandfather, Horace Benedict de Saussure.

On the evening of August 1, M. Henri Pasteur—as courteous a representative of the English Club in Switzerland as he is of the Swiss Club in London—gave a *fête* to all the members of the Congress at his beautiful grounds of Grand Sacconnex, near Geneva. The exclamations of delight uttered by the tourists (on this occasion certainly travelling in groups) as they emerged from the dusty highway at the summit of the hill and entered into the paradise of Sacconnex were as frequent as they were sincere. An absolutely cloudless day had been followed by an evening of rare beauty. The air was redolent with roses and new-mown hay, exquisite shrubs vied in beauty with stately forest trees. From one end of the graceful avenue which crosses the grounds we watched at sunset the whole range of Jura in the loveliest shade, and from the other, as the full moon rose, we identified the many peaks of the chain of Mont Blanc as they lay sleeping between the Buët and the Mont Joli. The beauty of the views did not appear to prevent the numerous guests from doing ample justice to the mighty feast that was spread out under the trees. Music and dancing followed, and at a late hour the large assembly slowly and unwillingly dispersed.

On the morning of August 2 the official representatives of the various Clubs were entertained at breakfast at the Hôtel de Russie, under the presidency of M. Freundler. The business of the Conference was concluded in the afternoon; and in the evening a friendly *réunion* took place in the Stand de la Coulouvrenière.

Sunday, August 3, was given up to unmitigated festivity, and the interest of the Congress culminated at the Banquet which took place at the Hôtel National, when 480 persons sat down. The enormous *salle à manger* was not large enough to hold all the guests, some eighty of whom were seated at tables on the terraces outside the hotel. The walls were hung with flags and Alpine pictures, and from the high table the view down the great hall and through the open windows to the lake and the mountains was very impressive.

M. de Saussure presided, and as the dinner proceeded proposed the toast of 'La Patrie—à la Suisse des Alpes.' Herr Lindt proposed 'The Swiss Alpine Club,' which was very warmly received; and then came the toast of 'The Foreign Alpine Clubs,' associated with the names of England, France, Austria, and Italy. The English President responded, in French, and pointed out the priceless benefits which the playground of Europe conferred year by year upon the overworked men of business who sought rest and relaxation amongst the Alps. On

arriving in Switzerland, he said, they were like the muddy Rhône on its entrance into the Lake of Geneva, but on quitting it they resembled the noble river that rushed and sparkled under the bridges of the city. M. Xavier de Blanc, who followed, paid many compliments to England and the English; and the company was also addressed by the representatives of Austria, Italy, and Spain. The proceedings were characterised by great enthusiasm; and as the afternoon wore on the Winkelried steamer, chartered expressly for the occasion by the chairman, arrived below the hotel, and, decked with banners from stem to stern, bore off the guests to the charming grounds of M. de Saussure, at Genthod, where another *fête* had been prepared. The guests entered the grounds at Genthod in procession, preceded by a band of music playing a march composed by Madame de Saussure specially for the occasion. The grand avenue and grounds were lit up by innumerable lanterns, and a delightful evening was spent, many of the guests being invited to inspect the numerous relics of the great De Saussure, still carefully preserved at the beautiful villa which he formerly inhabited. These relics included many scientific instruments made with his own hands, and the very shoes which he wore on his memorable ascent of Mont Blanc. Night came, and the Winkelried, now glittering with Chinese lanterns, bore back the whole Alpine fraternity happy and contented to Geneva.

The efforts made by the Reception Committee for the comfort and entertainment of the numerous visitors to the Congress were beyond all praise, and special thanks are due to M. Freundler for his indefatigable personal exertions.

The writer of these lines gratefully acknowledges the extreme courtesy and kindness which he received from his Alpine brethren of all nationalities during his stay at Geneva, which were more than sufficient to convince him that the English Club still holds the first place amongst European climbers; and it was with a warm heart that on Monday, August 4 (on his way to Mr. Wills's charming chalet at Sixt), he stopped at St. Jeoire, and flashed a last message of courtesy and goodwill to his many friends at Monnetier, where the visitors to the Congress held their final banquet, after spending a happy day amongst the 'dizzy heights' of the Salève.

C. E. M.

NEW EXPEDITIONS IN 1879.

THE Expeditions recorded in the following pages are believed to fall under the definition given in an early Number, that is to say, not to have been previously accomplished by English mountaineers, or noticed in the Journal. For the sake of unity and convenience of reference several of Mr. Coolidge's expeditions (e.g. Mont Mounier, Col de Valasco) are placed here instead of under 'Alpine Notes.'

In the cases where foreign climbers had preceded the writers, reference has, as far as possible, been made to the original accounts.

*Maritime Alps.**

MONT PELAT (French map, 3,053 mètres=10,017 feet; Piedmontese map, 3,048 mètres = 10,000 feet).—August 7. Mr. W. A. B. Coolidge with the two Almers were most hospitably received at Barcelonnette, by the resident members of the French Alpine Club on August 1. Having stopped there two days to assist at the 'fête patronale,' they left early on August 4, and went in 4 hrs. 10 min. by Enchastrayes and the Col de Fours to Fours (it may be useful to note that the inn is at Le Collet, and not at the hamlet marked Fours on the French map), proceeding the same day in 5 hrs. 10 min. to Allos by the Col du Talon (Col du Tarron of Bourcet's map). Leaving Allos on August 6, they followed the usual path by Champ Richard to the Lac d'Allos (2 hrs. 50 min. from Allos), the view of which is very disappointing after the descriptions in the guide-books. In 50 minutes from the lake they gained the Pas de Lausson of the French map (Bourcet's Le Loussoun or his Col d'Aloz, and the Col d'Esteng of the Piedmontese map), which overlooks a small lake. A succession of thunderstorms forced them to abandon, pro tem., their intention of ascending the Mont Pelat; descending a short way, they traversed a ridge on the left, and in 1 hr. 10 min. from the Pas gained the highest house of the hamlet of Esteng, not far from a little chapel, and within a short distance of the sources of the Var. The weather being much finer next day, August 7, they remounted in 1 hr. 45 min. to the Pas de Lausson (2,609 mètres = 8,560 feet). From this point a traverse over stones and round the head of a glen led them in 35 minutes to the foot of the Pelat. Climbing over a rather jagged buttress, they reached a basin to S.E. of the peak, climbed thence over *débris* to the crest of the E. arête and along the ridge to the highest summit, marked by a great wooden cross, reached in 1 hr. 35 min. from the base, or 3 hrs. 55 min. from Esteng. The view included the Chambeyron and Font Sancte group, as well as some of the Dauphiné peaks and the Viso, and a desolate region to the south, in which the Tinibras, the Monte Matto, and the Argentera could alone be identified. The villages of Allos and Champ Richard were visible, as well as the Lac d'Allos; but the sea could not be distinguished. There is a lower summit of the Pelat to the W., also visible from Allos. The Pelat seems to be the peak called on Bourcet's map the 'Montagne de la Grande Roche d'Aloz.' It does not, as has been stated, immediately overhang the Lac d'Allos. Returning to the base of the peak in 50 minutes, the party struck up to the left, and in half an hour reached the Col de la Petite Cayolle (whence the Viso is visible), passing several small lakes. A succession of glissades over snow led in 25 minutes to the lakes on the Col de la Cayolle, the watershed between the Bachelard torrent and the Var, and the most frequent route between the Var valley, Fours and Barcelonnette. From the Col 20 minutes sufficed to reach the 'Sources du Var,' and

* The northern limit of the *Maritime Alps* is placed in the following Notes at the Col della Maddalena, and not as in the 'Alpine Guide' at the Col de Longer. The former division is in agreement with nature itself, and in every respect more convenient.

Esteng was regained in 35 min. more or 2 hrs. 40 min. from the top of the Pelat.

MONT TINIBRAS (3,031 mètres=9,945 feet, French Map; 3,032 mètres=9,948 feet, Piedmontese Map; 3,040 mètres=9,974 feet, S. Robert; 3,115 mètres=10,220 feet, 'Le Alpi,' p. 764).—August 9. The same party, on August 8 mounted in 2 hrs. 35 min. from Esteng to the Col de Jallorgues (2,529 mètres=8,298 feet), through a very wild and desolate gorge. The Viso is the chief object seen from the col. The descent, almost entirely along the left bank of the torrent, through the pretty valley of Jallorgues, to S. Dalmas le Sauvage, occupied 2½ hours. In 45 minutes the bridge over the Tinée was reached, when a very picturesque wooded gorge led in an hour to the large but miserable looking village of S. Etienne.

Starting from S. Etienne early on August 9, they mounted by a stony path past the houses of La Balzia, through fields and up very steep slopes, high above the torrent in the Vallon de Tinibras, as far as a grassy shoulder commanding a good view of the upper part of the valley, reached in 2 hrs. 5 min. from the village. Traversing the rocky slopes by means of a faint track, they reached the lower Lacs de Tinibras in 50 minutes. Thence, bearing slightly to the right, they mounted by a sort of broad couloir or wall composed of stones intermingled with patches of snow to an upper basin (40 minutes); whence the cairn on the summit (visible from the lakes from far below) was reached in 50 minutes (4 hrs. 25 min. from S. Etienne) by the ridge overlooking the Lac Fero and the easy rocky face. The view included the Dauphiné and Maljasset peaks, as well as the Monte Matto, Argentera, Pelat, and Mont Mounier. By a scramble along the ridge to the N. of the cairn, a fine view down the Val Stura was gained. There are several neighbouring pinnacles (some with cairns), which nearly approach the Tinibras in height. It is believed that a small bit of the sea was seen. On the cairn is engraved the date (1835) of its erection; there is also a triangle drawn in tar or black paint on a neighbouring rock.

The party descended by loose rocks and snow to the Lac Fero in 40 minutes. The Lac Petrus was reached in half an hour more. Then, bearing to the left, they followed a track through the woods, and descended over steep bare slopes, exposed to the hot afternoon sun, reaching S. Etienne in 2 hrs. from the Lac Petrus, or 3 hrs. 10 min. from the top of the Tinibras. The ascent throughout is steep and monotonous. The descent by the Lac Fero is *not* recommended. This peak was reached in 1865 in 7 hrs. from S. Etienne by Count Paul de Saint Robert. He ascended by the Lacs de Tinibras and descended by the Lac Fero, and was fortunate enough to enjoy a very fine view of the sea and of the chain of the Alps to beyond Monte Rosa.

MONT MOUNIER OR MONT MEUNIER (2,818 mètres=9,246 feet, French and Piedmontese maps, 2,843=9,318 feet, 'Le Alpi,' p. 778).—August 11. The same party effected the ascent of this point, the highest between the valleys of the Var and of the Tinée. Starting from the hamlet of Roja or Rouja (3 hrs. from S. Etienne, the gorge of the Roja being

very fine), they mounted through the Vallon de Sellavieille of the French map, traversed a rocky barrier at its head by means of a steep track rather to the left, and so reached an upland basin at the W. foot of the peak. Ascending through this, and not being quite certain of the topography, they attained the shattered ridge at its head, which turned out to be the N.W. arête of the Mounier, and was followed to the great cairn on the summit, reached in 3 hrs. 40 min. from Roja. It would be quite easy to mount from the upland basin straight up the W. side, and the way up from the S. from Péone or Beuil is even easier, lying almost entirely over grassy alps, which extend to within a very short distance of the summit. Near the large cairn there is a smaller one, and a little stone hut large enough for one person. Though the party reached the summit before 7 A.M. and remained there 5¼ hrs., the view was very much limited by clouds; but can scarcely include more than the Dauphiné, Maljasset, and Valdieri peaks, with a small bit of Monte Viso. The S.E. view was very imperfect, but different bits of the coast were seen at various times. The party on the descent followed the N.E. arête for some way to the edge of the great rock wall, which supports the peak on the N.E. They were thus forced to make a fatiguing traverse round the head of an alpine valley, and by grass slopes and pastures regained the main ridge near a cairn-crowned knoll, supposed to be the Tête Sadour (1 hr. 20 min. from top). They then followed a track on the right, which led them into another valley and through woods, and over extremely hot bare slopes, to the hamlet of Isola in the valley of the Tinée, 3½ hrs. from the summit of the Mounier. The descent to Isola is steep and uninteresting.

COL DE VALASCO, OR DE' LAUS, OR BASSA DE DRUOS.—August 12. The same party, starting from Isola, mounted by the path through the Vallone di Ciastiglione, which is rather picturesque in its lower part. Leaving to the left the paths leading to the Bagni and to Santa Anna di Vinadio, they reached the ruined hut at the entrance of the Vallon del Rio das Verps in 2 hrs. 45 min., and in 50 min. more, after crossing the stream several times, the highest group of huts, then occupied by the cows. Twenty minutes farther on, after crossing a stream, they hit on a royal hunting path, which led them in half an hour to the Colle di Merciera ('Le Alpi,' p. 774, 2,359 mètres=7,740 feet) of the Piedmontese map (perhaps the same as the Col de Mercure of Bourcet's), overlooking the Vallon de Molières. Here they luckily met two of the royal gardes-chasses, who cleared up the intricate and puzzling topography. Without crossing this col, they followed another royal hunting path, which mounted along the W. side of the chain past the Laghi di Terra Rougia, sending off a branch to the Vallon del Rio Freddo, to the pass marked Bassa de Druos on the Piedmontese map reached in 1 hr. 5 min. from the Colle di Merciera. A huge 'pyramid' marks the col, which was called Col de' Laus (or Lacs) by the gardes-chasses, and is apparently that called Col de Valasco by M. Joanne ('Provence Alpes Maritimes,' p. 412), and alluded to by Mr. Ball ('S. W. Alps,' p. 18). It is very possible that this pass is identical with the Passo di Valle Oscura ('Le Alpi,' p. 494), which is indicated as connecting the valleys of the Tinée and the Gesso, and as being covered with

perpetual snow. The ascent from Isola had occupied $5\frac{1}{2}$ hours. The descent, along an excellent path, in many places still covered with snow, was perfectly straightforward. In 25 minutes the lowest of the five lakes in the Val Scura was reached; whence by zigzags, through scattered pines, the level of the Val di Valasco was attained in 50 minutes, the king's shooting-box in 25 minutes, and the Bagni di Valdieri in 50 minutes more, or $2\frac{1}{2}$ hours from the pass.

MONTE MATTO, OR ROCCA DEL MAT (3,087 mètres=10,128 feet, Piedmontese map; 3,118 mètres=10,230 feet, 'Le Alpi,' p. 764, and Saint Robert; 3,125 mètres=10,253 feet, Isaisa).—August 14. The same party ascended this peak. Starting from the Stabilimento of Valdieri, they followed the path up the Val di Valasco for an hour, till just below the plain on which the king's shooting-box stands. They then struck up to the right, by one of the royal hunting paths, which mounts by a succession of zigzags. At the point where it splits into two branches (reached in 1 hr. 25 min.) they took the right-hand branch, which soon, however, came to an abrupt end; and they then mounted nearly straight up over stony slopes and regained the left-hand branch, which makes a wide sweep, and then circles round to the right. They gained in this way the ridge overlooking the Vallone di Cougne (1 hour), (whence a faint track led down towards the valley), and then climbed over *débris* and snow to the ridge at its head, separating it from the Vallone della Meris, leading down to the Gesso at Santa Anna (20 minutes). From this col, whence there is a fine view of the Viso and of the two Chambeyrans, as well as of some lakes in the Vallone della Meris, a scramble up some steep rocks led to slopes of *débris*, whence the 'signal' on the summit is visible, and an easy walk over snow and rocks led to the E. summit in 40 minutes from the col (4 hrs. 25 min. from the Bagni). The 'signal' is very substantial, and is flanked by two minor pyramids. The view is very interesting. Among the nearer ranges visible are the Viso, the Chambeyrans, Les Baus, the Glacier Blanc in Dauphiné, and the Maritime Alps. The Argentera, seen across the valley of the Gesso, appears to especial advantage; in fact the ascent of the Matto was made by the advice of Count Paul de Saint Robert, in order to study this little-known group. The Stabilimento is very well seen from the top. The cairn contained the cards of several Italian climbers. Descending to the notch between the two summits, the party in 20 minutes from the E. top, gained by steep but good rocks the W. point, which is decidedly the highest. There was no cairn on the summit; and as Signor Marinelli seems to think that it had not been climbed at the time of his visit to the 'signal' in 1877, the party feel justified in claiming to have made the first ascent of the highest peak of the Matto. The Stabilimento was also visible from this point. Returning to the notch between the two peaks in 10 minutes, they kept rather more to the left than on the ascent, avoided the steep rocks mentioned above, and descended direct into the Val di Cougne (40 minutes). As the descent straight down to the Gesso would have lain entirely over fatiguing slopes of unstable rocks, the party, after going down the valley for a short distance, followed a steep track to the right, which led them round steep slopes and across a minor gorge to the Gias (châlet)

Cougne on the royal hunting path, which had been followed in the morning (45 minutes). Half an hour sufficed to reach the level of the Val di Valasco, and 40 minutes more the Stabilimento, which was regained in 2 hrs. 35 min. from the W. summit. The ascent may be effected direct from the Stabilimento by the S.E. face, but looks very steep and stony. The route actually followed is circuitous, but perfectly easy. It is very exactly described by Signor Damiano Marinelli, who effected the ascent by this way on August 4, 1877.*

MONTE DELLA STELLA (3,236 mètres=10,617 feet, 'Bollettino del Club Alpino Italiano,' No. 18, p. 361; 3,271 mètres=10,732 feet, Isaia); ROCCA DELL' ARGENTERA (c. 3,300 mètres=10,827 feet, Saint Robert).—August 18. The same party explored the range, containing these peaks, the highest summits of the Maritime Alps, south of Barcelonnette. Starting from the Stabilimento of Valdieri, they mounted the zigzag path through the Vallon Lourousa for 1 hr. 35 min. as far as the highest huts. They then, acting on the advice of Signor Cesare Isaia, the Secretary of the Italian Club and President of the Turin Section, who happened to be staying at the Bagni, and courteously communicated much valuable information, resolved to seek a new route up the Stella. Crossing the stream, and mounting to the right over snow, *débris*, and a royal hunting path, they reached in 30 minutes the edge of the little glacier of Argentera, which is apparently the same as 'li Gelas di Lourousa' of the map. Mounting this without trouble for 35 minutes, they gained the base of a long steep couloir of snow, to the left or N. of which rises the double-peaked Monte della Stella. They crossed the bergschrund by a snow bridge, and ascended the couloir, passing four isolated rocky masses, some way beyond which (1 hr. 15 min.) they took to the rocks on the left, and gained the N. arête (30 minutes), whence an easy scramble brought them to the summit (10 minutes), in 4 hrs. 35 min. walking from the Bagni. The highest ridge is composed of two rocky points, both of which were visited and crowned with cairns. The first ascent was made, on July 11, 1871, by Signor Isaia, who crossed the Colle di Lourousa to the Val della Ruina, and mounted by the E. face. He was followed by an Italian officer, engaged in surveying the country. In the ascent here described, a new way was struck out. Signor Isaia a few days previously had reached the summit of the couloir, but had been stopped on the rocks leading up to the Stella, owing to the inexperience of his guide, a local man.

The party were greatly astonished to find that the Stella was not, as is generally believed, the highest summit of the Valdieri *massif*, the view from the Matto having left the question in doubt. South of the Stella, and separated from it by the snow couloir they had climbed, rose a rocky mass, with several summits. These were clearly higher than the Stella, so it was resolved, as there was plenty of time, to explore the entire ridge. Descending in 15 minutes over broken rocks to the head of the snow couloir, the party then traversed the easy rocky E. slope under the nearest of the summits (seeing a herd of twenty chamois on a snow slope in the Val

* *Bollettino del Club Alpino Italiano*, No. 34, pp. 190-1.

della Ruina), gaining the top of the second peak in 15 minutes from the couloir. Here a fresh difficulty arose, in the shape of a third peak, still farther south, and apparently even higher. This was gained in its turn in 25 minutes by a traverse of the western slope, a descent on to the E. slope for a few steps, and a rather difficult reascent to the N. ridge, whence the rest of the climb was easy. Beyond this peak is a shoulder, and the ridge then descends steeply, rising again in the Cima di Nasta, climbed by Mr. Freshfield last year. It may remain in doubt for the present, which of the two peaks of the Argentera climbed is the highest, and which has the right, therefore, to be considered as the monarch of the Maritime Alps. It is probable, however, that this honour belongs to the last climbed and most southerly point. No traces of man were found on any of these peaks, on all of which cairns were built. The distant view was unfortunately very cloudy, and limited to some of the Dauphiné and Maljasset peaks. When fine, the sight of the sea should cause the panorama to be unique in the Alps, as to the north, this range can be seen from Monte Rosa and Monte Generoso. Returning in 30 minutes to the central peak, the party reached the head of the couloir in 40 minutes, climbing on the way a peak just north of the couloir, *vid* the S. ridge, in order to complete the exploration of the mountain. This point is little inferior in height to the two others and is higher than the Stella. The snow in the couloir being very hard, a good bit of the first part of the descent was effected over the rocks of the base of the Stella, until the morning's steps were reached. The bergschrund was crossed in 1 hr. 20 min. from the summit of the couloir, the path in the Vallon Lourousa gained in 25 minutes, and the Stabilimento in 55 minutes more, or 2 hrs. 40 min. from the summit of the couloir, and 3 hrs. 45 min. from the most southerly, and probably highest point of the Argentera. A more direct route through the Val dell' Argentera may possibly be effected; but from above the rocks look rather steep. As no traces were found on any of the three peaks of the Argentera, and as neither Signor Isaia (who knows this district better than any other amateur), nor the people at the Stabilimento had heard of any previous ascent, the party feel justified in claiming to have made the first ascent of these three points—the highest summits of the Maritime Alps. The Monte della Stella and the snow couloir can be well seen from the highroad to Cuneo, a few minutes below the Stabilimento.

CIMA DEI GELAS (3,180 mètres = 10,433 feet, Piedmontese map; 3,218 mètres = 10,558 feet, Saint Robert).—August 22. The same party, starting from the inn at the Sanctuary of la Madonna di Finestre (3 hrs above S. Martin Lantosque), followed the path to the Col di Finestre for 40 minutes, then, bearing to the right, traversed several spurs to a number of small lakes (30 minutes), above which was a large frozen one (35 minutes). Rounding a spur, and keeping always to the right, they gained in 25 minutes the crest of the ridge overlooking the Val Gordolasca, at the N. foot of a point crowned with a stoneman (*not* the Cima di Mont Colomb, which was seen still farther south). Then following the ridge to the left, an easy walk of loose rocks brought them, in 25 minutes, to a summit crowned by a stoneman, and well seen

from the inn, which had been pointed out to them as the Cima dei Gelas (2 hrs. 35 min. from the inn). The true Cima dei Gelas, however, towered up a good bit higher, and some way farther to the north. From this false summit there was a fine view of the sea, of the great E. rocky face of the Argentera, and of the frozen Lago Long at the head of the Val Gordolasca. Returning to the base of this peak in 25 minutes, they then traversed the slopes to the right, and reached in 15 minutes a stream flowing from near the foot of the Gelas. Following this, and mounting over snow, they attained in 10 minutes a curious little snow-filled hollow or plain, forming the extreme head of a branch of the valley of the Vésubie: on one side it overlooks the Lago Long, which lies at a great depth below; on the other, the Cima dei Gelas rises abruptly; straight ahead an easy ridge leads up to a stoneman on the main arête to the E. of the Gelas. The party followed this ridge towards the stoneman for some way, 20 minutes, in order to examine the Gelas, which from this side appears as a steep double-headed rocky summit, a snow couloir leading up to the notch between the two peaks. Leaving the knapsacks, they crossed some snow-slopes to the base of the couloir, mounted up it some way, and then took to the rocks on the left, which were broken, and though steep much easier than they had appeared from below. In this way the left-hand or S.W. summit was reached in 25 minutes from the bags. As it was slightly lower than the other point, they only halted to build a cairn, there being no trace of one; and in 10 minutes gained the higher peak—the true Cima dei Gelas—by descending over broken rocks to the head of the couloir, and then reascending. They had thus taken 1 hr. 45 min. from the false summit, or 4 hrs. 20 min. walking from the inn, which was perfectly well seen from the summit. It may assist future travellers to know that the Cima dei Gelas is the stone-crowned peak seen most to the left from the inn, it being well understood that it is to the right of the depression of the Col di Finestre. The ascent was made in 1864 from the inn in 5 hrs. by Count Paul de Saint Robert, who seems to have followed the route just described, except of course the détour to the false peak. It is believed that the peak has been reached several times from St. Martin. Among these ascents was one made on August 18, 1877, by M. A. Bétrix, a member of the Bernese Section of the Swiss Alpine Club.* No names were found in the ruined cairn on the summit, but only the wooden frame of a thermometer (maker's name effaced), on the back of which was carved 'F. Peillon, 1874,' the name probably of some chamois-hunter. There was a high cold wind blowing on top, and frequent showers of rain fell, but the view was so exceedingly interesting that a tolerably long halt was made. First of all was the perfect view of the sea obtained, the high wind keeping the horizon quite clear. It was the only time during the tour of the party in the Maritime Alps that it was possible to identify in a satisfactory manner the portions of the coast seen. There were the chain of the Esterels, the bay of La Napoule (Cannes itself could not be distinguished), the Lérins Islands, the promontory of An-

* *Jahrbuch des Schweizer Alpenclub*, xiii. p. 653, and private information.

tibes, and the Var just at the point where it flows into the sea, Nice itself being hidden by a low ridge. The sight was most beautiful, and one long to be remembered. Towards the N. the distant view was concealed by clouds; but the three summits of the Argentera, the most southerly peak seeming to claim supremacy, and the double one of the Stella were well seen. A long stretch of the Valley of Entraque, and the zigzags of the Col di Finestre were visible far below. To the E. the cone of the Mont Clapier rose across the Val Gordolasca, the Cima del Caire Cabret being between it and the view point. It is believed that from the actual summit of the Gelas the Ghiacciaja della Maledia was not seen, but this is not certain.

In 25 minutes the knapsacks were regained by way of the couloir, and in 5 minutes more the stoneman on the main ridge already mentioned. In this stoneman was found a bit of paper with the name of an Italian lieutenant, and a fragment of a Kentish paper, dated Canterbury, July 31, 1879, with the note in pencil 'Baptistin Plent avec Dr. Müller.' It did not appear why either of these parties had come up here: the descent to the N.W. Ghiacciaja della Maledia would lie down very steep rocks. As the party wished to sleep as high as possible near the N. foot of the Mont Clapier, they did not attempt the direct descent (which would have led them down to the track of the Col di Finestre), but after some reconnoitring descended on to the rocky slopes above the Lago Long, traversed them obliquely for some way, and regained the main ridge (40 minutes), possibly at the Col de la Feusse of M. Bétrix. They were now above that part of the glacier which bears the words 'della Maledra' in the map, and succeeded in gaining its surface, after going a short distance along the ridge, and then descending by steep rocks (25 minutes). This route sounds complicated on paper, but is easily understood when one is on the spot. Descending the glacier without difficulty, keeping rather to the right, and encountering a herd of 20 chamois, they soon reached its junction with a large glacier flowing directly from the base of the Cima del Caire Cabret, (from which the former is separated by a buttress not indicated on the map), and quitted the ice in 20 minutes from the time they had taken to it. Descending snowy and stony slopes, they soon came across traces of man, followed several sheep-paths, and at length, fearing to reach too low a point in the Vallone di Mont Colomb, bore far to the right, and by a fatiguing traverse through brushwood, interspersed with smooth faces of rocks, reached the 'Gias del Murajon' (50 minutes from glacier), where they were well received. They had only been 2 hrs. 45 min. walking from the summit of the Gelas; but much time had been necessarily consumed in reconnaissances, as the route to be taken was not always to be found on the first attempt. It may be added, that a fine view of this part of the chain, including the two glaciers, is to be had from Entraque, or the bridge between that place and the town of Valdieri, by which the main road between the Baths and Cuneo is joined.

MONT CLAPIER (3,046 mètres = 9,994 feet, Piedmontese map; 3,018 mètres = 9,902, 'Le Alpi,' p. 762); PASSO DI PAGARI, OR DEI GELAS DI BELVEDERE, PASSO DI MONT CLAPIER, PASSO DI LUSIERA.—August 23.

The same party, starting from the châlet of Murajon, followed the zigzag path up the valley, and in 35 minutes, traversing the 'Passo del Murajon' (wrongly marked in the map as *below* the châlet of the same name), gained the head of the valley—a desolate, stony tract, flecked with snow. The Clapier was not visible, and it was resolved to gain the main ridge as soon as possible. Accordingly, leaving the direct course to the Passo di Valmasca or dei Gelas ('Le Alpi,' p. 494), which is just south of the Cima del Lago Agnel, they struck up to the right in 10 minutes by one of the king's hunting paths in very bad repair, which led them in 1 hr. 10 min. to the edge of a small glacier, just indicated on the map, E. of the Cima del Caire Cabret. Mounting along this, and rounding a buttress coming down from the left, they gained in 40 minutes (2 hrs. 35 min. from the hut) the crest of the main ridge, at the spot marked as 'Passo del Pagari' in the map, overlooking the Val di Mont Clapier. From this point, which is called 'Passo di Pagari, o dei Gelas di Belvedere' in 'Le Alpi,' p. 494, a fine view of the Clapier and of the Val Gordolasca is gained. Descending in 10 minutes by rocks and grass to the snow at the head of the Val di Mont Clapier, the party then bore to the left across snow towards the base of the Clapier, passing at no great distance from a narrow notch in the rocky ridge just N.W. of the Clapier, which would lead to the glacier N. of the Clapier, of which mention will be made later on. The ascent of the final cone of the Clapier over the loose rocks and *débris* of the W. face was perfectly easy, the summit being reached in 1 hr. 5 min. from the pass, or 3 hrs. 40 min. from Murajon.

The 'signal' is of very massive construction, and is flanked by two smaller pyramids. A few steps below is a small hut, roofless, but filled with clean fresh straw, which would be of use to any one proposing to witness the sunset and sunrise from this point, the most southerly summit in the Alps, the height of which exceeds 3,000 mètres (= 9,843 feet). The weather was perfect, and the view remarkably fine. The sea view was much more hazy than from the Gelas, and included about the same extent of the coast. But the great feature of the panorama was the grand spectacle of the whole chain of the Alps, from Dauphiné and the Viso to the Grande Casse, Mont Blanc, and Monte Rosa. The last range, in which the Matterhorn, Dent Blanche, Weisshorn, Breithorn, Twins, Lyskamm, and all the peaks of Monte Rosa itself were clearly identified, was most striking, soaring into the clear air, undimmed by the slightest vapour, across the impenetrable haze which, as usual, veiled the plains of Piedmont—a fairy-like vision, never to be forgotten. Nearer at hand were the Argentera, Gelas, and Caire Cabret. The last-named peak is very slightly higher than the Clapier. The Lago Long and the Val Gordolasca, whence came up the tinkling of the cowbells, the Lago Bianco and the valley of Entraque, were also included in the view, while to the E. a tangled mass of rocky peaks (many crowned with cairns), gradually decreasing in height, and among which none claimed supremacy, extended to the Col di Tenda.

Having spent 2½ hrs. in enjoying this wonderful panorama, the party, wishing to reach the Valmasca, descended for a few minutes along

the E. arête, until it became very jagged, then creeping down a narrow gully effected an exceedingly difficult descent down the very steep smooth rock wall to the glacier lying just N. of the Mont Clapier. These rocks are by far the most difficult bit of climbing which the party came across in the Maritime Alps. They spent 2 hrs. 50 m. in getting from the summit on to the glacier. Crossing the glacier, they reached in 10 minutes a col at the very head of the glacier, overlooking the extreme N.E. angle of the Val Gordolasca, which commands a fine view of the Viso, the two Chambeyrons, and of the Clapier, the rock wall, down which they had just forced their way, appearing most formidable. Halting a few minutes to watch nine chamois which were on the very top of the Cima di Lusiera and the manœuvres of two hunters who were stalking them, the party reached in three minutes across loose rocks a col just N. of the Cima di Lusiera, overlooking the extreme head of the Valmasca. Descending by snow slopes to a little lake, they followed the stream flowing from it, across a low buttress, down to a large frozen lake on the E. side of the Passo di Valmasca (20 minutes). Gliesading down the snow, which entirely filled the bed of the stream, they gained the magnificent Lago Agnel, beyond which to the right were two other fine sheets of water. Following a track on the left bank of the lake they reached a ruined hut near its E. extremity, in less than an hour from the second pass. In 15 minutes more they gained the level of the main valley, and in half an hour more crossed by the third bridge to the right bank of the stream. Following a rough path high above the stream, they passed through fine woods and picturesque scenery, traversed a low shoulder, and descended into a rather extensive plain (55 minutes) dotted with châteaux. Traversing this, always on the right bank of the stream, they were forced by the approach of darkness to halt for the night at a house above a whitewashed building forming part of the hamlet of La Maddalena, where they were most hospitably entertained (20 minutes). They had been about 3 hrs. from the pass and 6 hrs. 5 min. from the top of the Clapier. The pass which leads from the Ghiacciaja di Mont Clapier to the Val Gordolasca may be named provisionally Passo di Mont Clapier; and that which properly leads from the Val Gordolasca into the Valmasca, Passo di Lusiera. It may be added, that the Piedmontese map is very fairly accurate in its delineation of the Gelas and Clapier group. The number of cairn-crowned peaks, which is rather bewildering, shows that the engineers have really taken some pains to survey this district. The Valdieri *massif* was being re-surveyed this summer. It is believed that the northern glaciers of the Gelas and Clapier group have not been previously explored, and that no published account exists of ascents of either of these two peaks. The Mont Clapier is well seen from the low Col della Madonna between the town of Valdieri and the Val Stura.

The following morning the party reached the Stabilimento Idropatico at S. Dalmazzo di Tenda in 2½ hrs. fast walking, by a stony path, shaded in the lower part by fine chestnuts.

On August 24, the same party visited the Laghi delle Meraviglie at the head of the Vallauria or Val della Miniera di Tenda, in order to

examine the mysterious rock drawings; and on the 25th went up to the inn on the Colle di Tenda. From this point they worked their way northwards to the foot of Monte Viso, over a succession of little-known passes:—viz. Colle del Sabbione to the town of Valdieri (4 hrs. 10 min. up, 5 hrs. 20 min. down), Colle della Madonna to Demonte in Val Stura (1 hr. 15 min. up, 1 hr. 50 min. down), Colle dell' Ortiga to Pradlèves, in the beautiful Val Grana (2 hrs. 40 min. up, 2 hrs. 40 min. down), Colle di Sibolet to Prazzo in Val Maira (5 hrs. 35 min. up, 3 hrs. 40 min. down), and Colle della Bicocca to Castel Delfino, in Val Varaita (5 hrs. 25 min. up, 1 hr. 45 min. down).

'From a climber's point of view the Maritime Alps cannot compare with other mountain groups; the views, however, are very fine, and, as they include the sea, probably unique, since—if we disregard the poets who have seen Venice from Mont Blanc—from no other Alpine summits (save the Viso and the Southern Dolomites) is the sea within range of vision, and from these it is far more distant. The flowers are very beautiful, and the valleys picturesque, though extremely warm in August. The inns almost everywhere are very fair and cheap, and, what is an attraction to some, the district is absolutely free from tourists. The weather is remarkably settled. From July 24 to August 31 we did not suffer from more than three wet days, besides two or three thunderstorms or showers. It may be useful for future travellers to note that, on the French side of the chain a passport is indispensable, and that a certificate of membership of the French Alpine Club is very useful. On the Italian side papers were never asked for. It will be found best to start early in the day, even for a short pass, and to rest on the higher slopes in the cool mountain air. Possibly June or September would be better months for exploring the district, but some of the Bagui do not open before the very end of June. I do not pretend to have completely explored this interesting group. Much still remains to be done, especially round Vinadio in the Val Stura, and at the head of the Val Maira; while even the environs of Valdieri are scarcely known, save to Signor Isaia, and possibly one or two other members of the Italian Club.'

W. A. B. C.

Cottian Alps.

COL DU VALLON LAUGIER.—*July 23.* Mr. Coolidge, with the two Almers, starting from Guillestre, mounted along the right bank of the Rioubel torrent, and passing through rather picturesque scenery reached in 2 hrs. 45 min. the lonely hamlet of Escreins, whence there is a fine view of the Pointe de la Font Sancte, the highest peak of the 'massif de Ceillac.' They had intended to cross to the valley of the Ubaye by the Col des Houerts (Bourcet's Col des Orches), but were dissuaded from doing so at Escreins. They accordingly followed a rough track, which led them in 1 hr. 5 min. past a seemingly impassable rocky barrier to the Vallon Laugier proper. Ascending through this first valley, always on the right bank of the stream, and passing through a miniature gorge, they reached in 35 minutes a stone hut at the entrance of a long and desolate upland valley, at the head of which was

the Col, gained in 1 hr. 25 min. more, the last part of the ascent being over snow slopes. It lies a little to W. of 'La Mortice—Signal' of the French map. A short descent over snow led to a wild glen strewn with huge blocks fallen from the surrounding peaks. Having ascertained from a shepherd that the direct descent led to the village of Grande Serenne, which was too far down the valley to suit them, the party in about half an hour from the pass struck to the left over a level plateau—a shoulder of the Grand Caire—and effected a very fatiguing and somewhat difficult descent over very steep grass and rocky slopes to the level of the Ubaye, not far from the Pont Voûté (or Pont du Croûtas), reached in 2 hrs. 35 min. from the pass. They then mounted by the ordinary path to Maljasset, the chief hamlet of the Commune of Maurin or Mary, at the extreme head of the valley of Ubaye. Total walking—Escreins to pass, 3 hrs. 5 min.; from pass to level of valley, 2 hrs. 35 min. This pass is not noticed in the guide-books or marked on the maps, but is well known to the people of the district. It may be named provisionally Col du Vallon Laugier.

POINTE DE LA FONT SANCTE OR DE LA FOND SAILETTE (3,370 mètres = 11,057 feet).—July 25. The same party made the second ascent of this peak, but by a new route. Starting from Maljasset, they followed the usual path to La Barge, and a few steps beyond struck up to the right by a faint track along the side of the torrent coming down from the Vallon Claus. In 1 hr. 10 min. from Maljasset they gained the opening of this secluded glen, the head of which is closed by a very fine rocky wall extending from the Panestrel to the Font Sancte. Mounting to the right, they passed over the summit of a prominent grassy mound, and thence by *débris*, rocks, and snow gained (in 1 hr. 50 min. from the opening of the Vallon Claus) the crest of the great E. arête of the Fond Sancte. The way thenceforward lay at first over snow slopes on the N. side of the arête, and then along the crest of the ridge, many pinnacles having to be surmounted or circumvented, though no very great difficulties were encountered. A number of cairns were erected on different points in this ridge. The ascent of the highest summit was effected by a very steep rocky wall, the rocks, however, affording good hand- and foot-hold. It was reached in 2 hrs. 35 min. from the time the ridge was struck. M. Novarese's pyramid and card were found on the top. The view was very fine, including the Dauphiné, Tarentaise, Mont Blanc, and Monte Rosa groups, besides the Monte Viso, Grand Ruben, Aiguille de Chambeyron, and many other peaks of the Maritime Alps. The villages of Ceillac, Escreins, and La Barge were all visible. A rocky point slightly to the S., which is very conspicuous from the Vallon Claus, is decidedly lower than the Font Sancte. Making a slight détour by the N.W. face, to avoid the last steep bit, the party then descended from the very base of the highest summit to the head of the Vallon Claus in 50 minutes by a well-filled and most convenient snow couloir, which, owing to their ignorance of the exact lie of the ground, they had not utilised in the morning. From the base of the couloir Maljasset was regained by the previous route in 1 hr. 25 min. Total walking—Ascent, 5 hrs. 35 min.; descent, 2 hrs. 15 min.

The Font Sancte is the highest point of the range to the W. of the

valley of the Ubaye. It is the meeting point of the valleys of Ceillac, Escreins, and Maurin. Bourcet's map marks its portion quite accurately; and from this map it will be seen that it is not identical (as has been maintained) with the Pointe des Orches, to which Baron von Zach assigned the absurd elevation of 3,995 mètres ('Le Alpi che cingono l'Italia,' p. 782), a height attained in reality by no peak nearer than the Pointe des Ecrins in Dauphiné.

A peak of this mountain, 100 feet lower than the highest point, was climbed, *viâ* the Col de Girardin, and 'the S. arête' (query Eastern), from Maljasset, on July 18, 1865, by Messrs. R. W. Taylor and W. G. Adams, with J. B. Sinond.* They called it Pointe de Sainte Anne, from the chapel at the N. foot, and assigned to it a height of 11,278 feet. The first ascent of the highest summit was made from the Escreins side (by which the way does not seem difficult), by M. Henri Novarese, of Turin, with Emile Pic, of La Grave, on August 5, 1878; the view, however, being entirely concealed by clouds. M. Novarese and M. Guillemin call it Pointe de la Font Saille. This group has been hitherto much neglected. Apparently the only articles relating to it are a description by M. Novarese, in the 'Durance' of Embrun (numbers of 17-31 March, 1878), of an attempt in 1877 on the Henvières (3,273 mètres), a lower summit of the group, and some articles in the 'Durance' (August 10, 1879, and following numbers) by M. Lagier. On August 2, 1878, M. Novarese made a new pass between Escreins and the Ubaye valley, and climbed a point between the Font Sancte and the Henvières ('Durance,' Sept. 8, 1878). The peasants of the neighbouring valleys go on pilgrimage to St. Ann's Chapel on July 26. The name of the peak may possibly have some connection with the lake near the chapel.

POINTE DE MARY (3,129 mètres = 10,266 feet).—July 24. Mr. Coolidge, with the two Almers, starting from Maljasset, at the head of the valley of the Ubaye, in the department of the Basses Alpes, crossed the Ubaye, and then mounted a wooded shoulder above the marble quarry at the entrance of the Combe de Mary. Passing a ruined *châlet*, they ascended gradually over *débris* and snow to the W. arête, by which the summit was easily gained in $2\frac{3}{4}$ hours from the village. There is a stoneman on the top of this point, which, unnamed in the map, is known as the Pointe de Mary at Maljasset, from which it is very conspicuous. It is admirably situated as a belvedere for the neighbouring summits, and should certainly be visited by anyone proposing to explore this district. The view also included Monte Rosa, the Matterhorn, Weisshorn, Dent Blanche, the Grande Casse, as well as the Dauphiné peaks and the Viso. This summit is destined to become the Gorner Grat of Maljasset. The return, shortened by glissades, was effected in an hour. No previous traveller seems to have visited this unequalled view point.

GRAND RUBREN OR RIOBURENT (French map, 3,341 mètres = 10,962 feet; 'Le Alpi che cingono l'Italia,' p. 764 (Turin, 1845), 3,369 mètres = 11,054 feet). (PEAK of 3,396 mètres = 11,142 feet, French

* *Alpine Journal*, ii. 207.

map).—*July 26.* The same party, starting from Maljasset, followed the path up the valley past the Lac du Paroird as far as the bridge leading to the right bank, near a marble quarry (1 hr. 25 min. from Maljasset). They then ascended steep and stony grass slopes to the upper entrance of the valley (25 minutes), crossed the stream to a road from a quarry, and soon reached the 'cabane des bergers' (15 minutes). Continuing to mount along grass slopes on the right bank of torrent, they bore gradually to the left, and by snow and *débris* reached (40 minutes) the edge of a great basin immediately to the south of the Rubren. Descending into this, they traversed snow-fields and mounted by snow and *débris* to the crest of the N.W. arête, just at the base of the final cone (1 hr. 5 min.), which was reached in 20 minutes more, or 4 hrs. 10 min. walking from Maljasset. There is not the slightest difficulty on the whole ascent. The summit is crowned by a massive 'signal,' built by the Italian engineers. The view was extremely fine; including the Viso, which from here shows to great advantage, Monte Rosa, Matterhorn, Dauphiné, Maurienne, Tarentaise, and Levanna groups. It is singular that this peak has not hitherto attracted greater attention. The only published account of the mountain seems to be the paper by M. François Arnaud, describing the ascent effected by himself and a party of friends on October 9, 1875.* After a long stay on the top, the party descended in 15 minutes by the S. arête to near its lowest point, whence, in 20 minutes, passing some small lakes, they reached the depression between the Rubren and the 'signal'-crowned peak, marked 3,396 mètres on the French map; the summit of which was reached in 15 minutes more. The view was similar to that from the other point, save that the Viso was even grander, and that two villages (probably La Chianale and La Maddalena Ruetta) in the Val Varaita, and some châteaux in the Vallon du Rau of the Piedmontese map, a branch of the Val de Bellino, were clearly seen.

Returning in 20 minutes to the lowest point in the S. arête of the Rubren, they regained the path in the valley of the Ubaye in 1 hr. 30 min. and Maljasset in 1 hr. 15 min. more, or 3 hrs. from the top of the Rubren. This expedition is strongly recommended to future travellers.

It may be noted that the Piedmontese map utterly ignores the existence of the Rubren, and that Bourcet's map spells the name 'Rieubrenque.' The Rubren is the pyramid crowned by a stoneman, which is seen from Maljasset at the extreme head of the valley.

AIGUILLE DE CHAMBETRON (3,400 mètres=11,155 feet, French map).

July 28. The same party made the first ascent of this peak, the highest summit between Monte Viso and the Mediterranean. Starting from Maljasset, they mounted, through the Combe de Mary, to beyond the second hut, then bearing to the right and crossing two streams they reached the lowest of the Lacs de Marinet in 1 hr. 55 min. from the village. As the prospects of a successful attack from the north or east seemed doubtful, it was resolved to make an attempt from the west or south. In 50 minutes from the lake, over *débris* and snow, they reached the ridge at

* *Annuaire du Club alpine français*, ii. (1875), 237-242.

the head of the Vallon de Chillol. Mounting along it for 20 minutes, in the direction of the Aiguille, they then circled round the head of the Vallon de Chillol by means of steepish snow slopes on the N.W. flank of the Aiguille; and, climbing some rocks, reached a second ridge, overlooking the Vallon and Glacier de Chauvet in 50 minutes from the first ridge. Having ascended a snow slope immediately to the E. of the second ridge, they then took to the rocks, and after a rather difficult climb, including the crossing of several steep couloirs, they gained the westernmost and lower summit of the Aiguille (1 hr. 25 min. from second ridge). After building cairns on this and another point five minutes distant, they succeeded in descending by a slope of loose stones to the Glacier de Chauvet in 20 minutes; and in 10 minutes more regained the highest ridge, at the upper end of a very steep snow couloir, which is well seen from the north side. In this way a great tower on the ridge, which seemed to bar further progress, was turned. The party now mounted over a snow slope, which from below seems like a sort of 'Glacier Carré' on the rocky face of the Aiguille, and then scrambled up the rather difficult final rocks, of a reddish colour: thus reaching the true summit by the W. arête and face in 40 minutes after having regained the crest of the highest ridge, though it was thought that it would take far more time (6 hrs. 35 min. from Maljasset). Despite the late hour at which the summit was reached (1.20 P.M.), there was not a cloud in the sky, and the marvellous view included all the chief summits of the Pennine, Graian, and Tarentaise Alps, the Dauphiné group; the Viso, the Maritime Alps, and the immediately surrounding peaks being seen to especial advantage. A large cairn was constructed on the narrow space afforded by the summit. Returning in 40 minutes to the head of the above-mentioned couloir (the final rocks and snow requiring care in the descent), the party then descended straight to the Glacier de Chauvet, which is much larger than the map would lead anyone to believe, and glissaded down it. A short ascent brought them in 20 minutes to the ridge between the Vallons de Chauvet and de Chillol. Following their former route, they gained in 30 minutes the ridge overlooking the Combe de Mary, in another half-hour the Lac de Marinnet, and in 15 minutes more the track in the Combe de Mary, whence an hour's stroll brought them into Maljasset—3 hrs. 15 min. from the summit of the Aiguille. The return route should be adopted on subsequent ascents. It may be possible to ascend direct from the Glacier de Marinnet by the couloir already mentioned, but it is very long and extremely steep, especially at its upper end. However, the return to Maljasset could be made by the Glacier de Chauvet. The fact that the district has been so rarely visited by mountaineers can alone explain why this fine peak had not hitherto been conquered.

POINTE HAUTE DE MARY (3,212 mètres=10,539 feet, French map). *July 29.* The same party made the first ascent of this peak. Starting from Maljasset, they followed the ordinary path to the Col de Mary for 1 hr. 10 min. and then bore to the left over grass slopes and a very fatiguing succession of large unstable boulders of rock, towards the base of the desired peak. By means of a couloir, they then attained (1 hr. 55 min.)

the depression between the *Pointe de Mary* (3,129 mètres) and the *Pointe Haute de Mary*. They had hoped to find an easy route up the N. face, but after some investigation renounced this idea, and mounting a short distance along the ridge, descended to the western side of the mountain. The difficulty was how to attain a snow-field lying on the S. face of the peak. The party gained, by a steep snow slope, the ridge of a buttress, pierced by a curious natural hole in the rock, from which they succeeded with considerable difficulty in descending into and traversing a steep and narrow couloir, exposed to falling stones. The rocks on the other side proved much easier than they had seemed from below, and the snow-field was gained in about 1 hr. 50 min. from the depression between the two peaks. The summit, the easternmost and highest of three very shattered and unstable rocky pinnacles, was reached by a rough scramble in 20 minutes more. The view was similar to that gained from the other peaks in this district. The highest summit consists of two prongs, on each of which, as well as on the depression between them, cairns of no great size, owing to the insecurity of this lofty perch, were built; on the Western, also, were left nine feet of Mr. Buckingham's Alpine rope, together with the names of the party. Returning by the same route, the party regained the snow slope below the pierced ridge in 50 minutes from the summit, the traverse of the rocks being decidedly difficult, though not very long. From this point they descended by snow to the great collection of unstable boulders mentioned above, rejoining the path of the *Col de Mary* in 1 hr. 10 min., and reaching *Maljasset* in half an hour more. Total walking—*ascent*, 5¼ hrs.; *descent*, 2 hrs. 30 min.

This was the last expedition made by the same party during their stay at *Maljasset*. They were favoured throughout by magnificent weather, and were thus enabled to commence the exploration of this district, hitherto utterly neglected by climbers, and which is still far from being exhausted.

BREC DE CHAMBEYRON (3,388 mètres=11,116 feet, French map).—*July 31*. The same party made the second ascent of this peak—the first by a traveller. Starting from the village of *S. Paul-sur-Ubaye* (about 2½ hrs. below *Maljasset*), they followed the path up the valley to the village of *Grande Serenne*, crossed the *Ubaye*, and mounted by a rather stony path to the charmingly situated hamlet of *Fouillouze*, above which the *Brec* rises in all its majesty (1 hr. 45 min. from *S. Paul*). After keeping along the path by the right bank of the torrent for a few minutes, they took to a very rough and fatiguing track up steep stony slopes, which led them (1 hr. 40 min.) from *Fouillouze* to the *Lac Premier*. They then rounded the base of the *Brec*, passing several small lakes, and reached the ridge at its N. foot (1 hr. 15 min.), overlooking on one side the frozen *Lac des Neuf Couleurs*, and on the Italian side another small lake, not very far from the *Col de la Gippiera* of the maps. The *Aiguille de Chambeyron*, from which this side of the *Brec* had been carefully studied, rose steeply to the North. Crossing snow slopes to the foot of the Italian or E. face of the *Brec*, they then climbed across the face by easy loose rocks and four short couloirs or bands of snow to a conspicuous snowy ridge, not far from the *S. arête*. Mounting along this ridge, the slope becoming

finally very steep, they reached the lower end of a short narrow gully (not well seen from below), at that time partially filled with snow. Access to this gully was closed by a huge boulder, to scramble on to the top of which was the sole difficulty of the expedition, and was effected by means of an awkward step or two. The gully was climbed in a very few minutes, and the party reached the highest ridge between the two summits, that to the left or S., which is the highest, being reached in 1 hr. 45 min. from the Col de la Gippiera. The view, which was rather cloudy, included Monte Rosa, the Dauphiné peaks, Fouillouze, Grande Serenne, S. Paul, and some villages in the Val Maira. The summit ridge is composed of a spacious plateau gently sloping towards the west, with a largish patch of snow at its lower end. About its centre a large cairn has been built, and two others stand on the two summits on the E. rim of the plateau, i.e., exactly on the watershed. A large red flag and a card were left on the S. point; and having visited the two other cairns, the party returned by the same route to the Col de la Gippiera in 1 hr. 15 min. In 40 minutes more Lac Premier was passed, and thence Fouillouze was reached in 1 hr. 5 min., the rocky slope being exceedingly annoying on the descent. Thirty-five minutes more sufficed to reach the bridge over the Ubaye at Grande Serenne, and in three-quarters of an hour more S. Paul was regained: where the complete success of the ascent, despite all predictions to the contrary, had created considerable excitement, the highest point being plainly seen from the village. Total walking—*ascent* 6 hrs. 25 min., *descent* 4 hrs. 20 min. The ascent from S. Paul is longer and more fatiguing than would appear from these times, which are rather fast. Future travellers are advised either to sleep at Fouillouze, or to descend to the highest châteaux in the Val Maira.

The Brec was considered inaccessible till 1878. On July 20, 1878, the first ascent was effected by two natives of Fouillouze, Joseph Risoul and Paul Agnel, stimulated by the reward offered by the Barcelonnette Section of the French Alpine Club. Starting from Fouillouze at 11 P.M. they followed the route described above as far as the great boulder in the gully, when they struck to the right, over very steep rocks to the N. arête, and in this way reached the summit about noon. Having built three large cairns, they regained Fouillouze at 9 P.M., having surmounted, according to their account, unheard-of difficulties. 'I may state that before our ascent these two men were unwilling to indicate to us the exact route which they had taken. This we learned only on passing through Fouillouze after our ascent. We found the climb rather long, though offering no serious difficulty; our success was no doubt due to the close examination of the Brec which we had made from the Aiguille a few days before. It may be noted that Bourcet's map marks only the "Pointe de Chambeyron," by which the Aiguille is meant. It does not show the Brec, which on the Italian map is called "Roc de Chambeyron." The Brec is best seen from Grande Serenne or Fouillouze, and is a very fine rock peak.'

W. A. B. C.

COL VIEUX (2,738 mètres=8,983 feet).—*September 3.* The same party, having reached the Col Agnel from Castel Delino by the ordinary path, and wishing to reach Abriès that evening, traversed the slopes to the right, and gained in 30 minutes the Col Vieux, where the

Dauphiné peaks, with the addition of the Olan, are nearly as well seen as from the Agnel. On the col there are remains of the entrenchments of the Spanish troops, thrown up during the war of the Spanish Succession. A rough track, gradually becoming a good path, led, in 2 hrs. 20 min., leisurely walking, along the base of the curious Roche Taillante, by the Lacs de Foréant and d'Egourgeou and the chalets de Médille, through a picturesque gorge to La Chalp in the Guil valley, whence Abriès can be reached in 1 hr. 20 min. by the char road. It is said to be even shorter to mount the ridge to W. of the two lakes, about half way between them, and to descend along the torrent de Ségur to Ristolas, 40 minutes from Abriès. By either route Abriès can be easily reached in a day from Castel Delfino, without losing the very grand view of the Dauphiné peaks from the Col Agnel, or the sight of the N. face of the Monte Viso from the upper valley of the Guil; and as the Col Agnel is a mule-path, while the direct route, the Col de Vallante, is not, the walk, though rather longer, is much easier for poor walkers, or in case a traveller is indisposed.

MONTE VISO FROM THE NORTH (3,840 mètres=12,599, Piedmontese map; 3,845 mètres=12,615 feet, French map).—*September 5.* The same party effected the second ascent of Monte Viso from the north. Starting from a bivouac near the lake on the Italian side of the Col de Vallante (about 5½ hrs. from Abriès), they mounted in 1 hr. 20 min. over *débris* and a long snow slope to the Col du Viso, between 'le Sedie Cadreghe' and the Viso itself. Thence they mounted, by easy rocks and a short couloir, to the northern face, reaching in 30 minutes from the col the upper rim of M. Guillemin's 'glacier en V.' The rocks of the great couloir leading to the upper névé being partially glazed with ice, the base of the couloir was traversed (the only approach to difficulty on the entire expedition), and the rocks to the right of it climbed without any trouble. The upper strip of névé was thus reached in an hour from the 'glacier en V.' Cutting straight up the slope to the upper rocks, the party, when nearly opposite a curious point in the jagged ridge above, resembling an inverted bell, bore to the left to the crest of the arête, and then doubled back till immediately under the above-mentioned point. A few steps revealed the easily accessible double-peaked summit ridge of the Viso, the left hand, or W. summit (that with the statuettes of the Madonna) being reached in 1 hr. 20 min. from the upper névé, or 4 hrs. 10 min. walking from the bivouac. The quick time may be attributed partly to the fact of the rocks being entirely free from snow, and partly to previous knowledge of the exact details of the route furnished most courteously by M. Guillemin. The view was entirely concealed by clouds. After having visited both peaks, the party descended by the ordinary route—a most easy, fatiguing, and tedious walk over loose rocks—to the great snow slope in the Vallon delle Forciolline in 1 hr. 35 min. from the summit. They had intended to cross by the shattered ridge to the west of that valley to the Col de Vallante, and so regain the Refuge des Lyonnais the same night; * but the

* *Annuaire du Club alpin français*, iii. (1876), 276–280.

weather becoming very unfavourable, they were forced to descend through the Forciolline valley in heavy rain by a very faint track, and found refuge for the night at one of the châteaux at the junction of that valley and the Vallon de Vallante. Next day, in bad weather, they reached the Col de Vallante in 2 hrs. 5 min., the Refuge des Lyonnais in an hour, and Abriès in 3 hrs. 5 min., or 6 hrs. 10 min. from the châteaux.

The first ascent of Monte Viso from the north was effected on August 12, 1879, by MM. Paul Guillemin and A. Salvador de Quatrefages, with Emile Pic of La Grave, after many gallant attempts in 1877 and 1878.* They followed the route described above, but stopping frequently to take photographs, employed 12 hrs. 10 min. (including halts) from the Col de Vallante to the summit, near which they were forced to bivouac, having encountered most serious difficulties. Under ordinary circumstances an active walker could probably make the ascent in a day from the Refuge des Lyonnais, a hut fitted up by the French Alpine Club in the upper valley of the Guil, high above the right bank of the stream, about 1½ hr. below the Col de Vallante. It may be of use to note that the char road, in the valley of the Guil (which will ultimately be carried over the Col de la Traversette), extends at present a long way beyond La Chalp—in fact, to within an hour of the Refuge des Lyonnais.

Dauphiné District.

TÊTE DES FÉTOULES (3,465 mètres=11,369 feet).—July 6. Mr. Coolidge, with Christian Almer and his son Christian, made the third ascent of this peak, and the first in one day from S. Christophe. Starting from S. Christophe, they reached in 1 hr. 10 min. by the usual path, the bridge over the Vénéon, leading to la Lavey. Following the path for 25 minutes farther to a rocky hollow, they then struck up to the left over *débris* and rocks, so as to gain the upper part of the mountain. In 2 hrs. 15 min. they had rounded a spur coming down from the Tête du Crouzet, and in 30 minutes had reached the right bank of the Glacier des Fétoules. Crossing the glacier in 45 minutes, when not far from the Col des Fétoules, they struck up the snowy face of the mountain, taking to the N. arête in 35 minutes, and reaching the summit in 50 minutes more. There was a cold wind, but the view was very fine. Total walking—ascend (slow) 6 hrs. 30 min.; descent 3 hrs. 10 min.

The first ascent was made on August 29, 1876, in 3 hrs. 35 min., walking from la Lavey, *vid* the N. arête, by M. E. Boileau de Castelnaud, with the two Gaspards.† The second ascent was made on the same day, an hour or two later, by M. Albert Guyard, with Henri Devouassond and Auguste Cupelin, who mounted from Les Étages to the Col des Fétoules at the N. foot of the peak, ascended it by the N. arête, and descended to la Lavey.‡

* *Annaires du C. A. F.*, iv. (1877), 222-230; v. (1878), 42-57.

† *Annuaire de la Société des Touristes du Dauphiné*, ii. (1876), 123-125.

‡ *Annuaire du Club alpin français*, iii. (1878), 217-220.

TÊTE DE L'ÉTRET (3,563 mètres = 11,690 feet); **COL DE LA LAVEY** (3,320 mètres = 10,860 feet).—*July 8.* The same party, starting from S. Christophe, followed the usual path to the châteaux of la Lavey, and continued to mount along the side of the stream for about 50 minutes beyond. Then striking up to the left, they climbed over a buttress of the Etret, not far from the foot of the Glacier du Fond, and in 1 hr. 20 min. reached the right bank of a very broad, short glacier between the Etret and the Rouies, which the maps absolutely ignore. In 30 minutes the upper plateau was reached, and the party, bearing far to the left, gained in 50 minutes a point near the crest of the S. ridge of the Etret, where the knapsacks were left. An hour's walk over snow led to the foot of that peak; the second ascent of which was then made in 1 hr. 25 min. by the rocky SW. face, which is not so formidable in reality as it seems to be when seen from a distance (5 hrs. 55 min., walking from la Lavey). The view was fair, despite a slight snow storm. The first ascent was made by the same route on September 4, 1876, in 5½ hrs. walking from la Lavey, by M. E. Boileau de Castelnau with the Gaspards.* Returning in 55 minutes to the knapsacks, they then traversed the snow-covered glacier to the right, and in 30 minutes gained the Col de la Lavey—the second passage (first crossed and named by MM. F. Perrin and A. Salvador de Quatrefages, with the Gaspards and Roderon, on June 28, 1878).† The Col is the W. edge of a little plateau of snow (called Col de l'etr on the map) enclosed between the Pointe des Etages, the Sommet des Rouies, the head of the Glacier du Vallon des Etages, and the Glacier du Chardon. In a few steps the previous year's route up the Pointe des Etages was rejoined, and an easy descent effected to the Glacier du Chardon, which was quitted in 50 minutes from the Col, the descent being very hurried, in consequence of unfavourable weather. La Béarde was gained in 1 hr. 40 min. more, the party being considerably delayed by not being aware that the bridge opposite the village had been washed away, which obliged them to retrace their steps for a considerable distance.

All the existing maps are at fault in their delineation of this part of Dauphiné, ignoring the glacier mentioned above, and placing the Tête de l'Étret much too far north. On the maps of the French engineers 'etr' should be corrected to 'Étret.'

PIC DU SAYS (3,472 mètres = 11,400 feet).—*July 11.* The same party effected the first ascent of this peak. Starting from La Béarde, they followed the usual route to the Col du Says until within a short distance from the Col (2¾ hrs.) Then striking up to the right over *débris* and snow, they gained in 1 hr. 10 min. a sort of snowy amphitheatre, shut in on all sides by steep rocks. At the head of this was a steepish snow couloir, the base of which was reached in 35 minutes. The party ascended this couloir in 40 minutes, and then climbing up the rocks to the left—the N. arête of the peak—rendered rather difficult by the quantity of snow still lying on them, reached the summit in 55 minutes. Stopping a short time only, owing to the lateness of

* *Annuaire de la S. T. D.*, ii. (1876), 129–131.

† *Annuaire du C. A. F.*, v. (1878), 81–89. Cf. *Alpine Journal*, ix. 94.

the hour, they traversed the whole of the highest ridge, building several small cairns, and then descended in 45 minutes by the rocky E. wall, which was easier than was expected, to the snowy amphitheatre. The route of the Col du Sais was regained by glissades in 40 minutes, and La Bérarde in 1 hr. 55 min. more, the return journey being greatly facilitated by the vast quantity of snow in the Vallon de la Pilatte. Total walking (fast, as doubtful weather had delayed the start till 9.30 A.M.)—up, 6 hrs. 5 min.; down, 3 hrs. 20 min.

The map does not seem to be quite accurate here, as it was not possible to identify the peak, marked 3,409 mètres; the S. end of the summit ridge, which was reached, is just at the angle, but is certainly not 63 mètres (= 207 feet) lower than the N. end.

LE PLARET (3,570 mètres = 11,713 feet).—*July 16.* The same party effected the third ascent of this peak. Following the ordinary path up the Vallon des Etançons for an hour, they then struck up the slopes to the left some way before reaching the Torrent de la Clause, and without the slightest difficulty reached the foot of the glacier in 1 hr. 30 min. over stony pastures and moraines. The remainder of the ascent was effected under a most powerful sun. One hour over snow led to the base of the peak, and the party then mounted a steep snow slope and rocks, and thus gained the snowy E. face, up which they mounted nearly in a straight line to the summit, reached in 1 hr. 30 min. from the base (5½ hrs. from La Bérarde). The heat the last part of the way up was excessive; on the summit the thermometer in the sun stood at 100° (Fahrenheit). The view was very interesting, particularly towards the Meije and the range on E. side of Vallon des Etançons. The descent to La Bérarde by the same route, including a détour to examine the scene of M. Cordier's fatal accident, occupied 2 hrs. 40 min.

The first ascent of the Plaret was effected on June 7, 1877, by M. Henri Cordier, with Jakob Anderegg and Andreas Maurer. They mounted by the S. arête and descended by the N. arête. After having quitted the glacier, M. Cordier unfortunately lost his life by falling through a hole in a snow-trough into the glacier torrent.* The second ascent was made by M. Henri Duhamel with Giraud-Lézin, on August 12, 1878. From the base of the glacier on the descent they traversed the side of the mountain to the Tête de la Maye (2,708 mètres = 8,885 feet), a knoll above La Bérarde, commanding a fine panorama, and up which a good path has been constructed by the Isère Section of the French Alpine Club, by which the summit is reached in 1½ hr. from the village. M. Duhamel employed 4½ hours up the Plaret and 2¼ hours down.†

LE PAVÉ (3,831 mètres = 12,570 feet).—*July 19.* The same party effected the first ascent of this summit, which had been ignored by all maps previous to the excellent one published by M. Duhamel in the last number of this Journal. Starting from La Bérarde, they followed the usual track up the Vallon des Etançons to near the foot of the

* *Alpine Journal*, viii. 285.

† *Annuaire du C. A. F.*, v. (1878), 117-121.

Meije (4 hrs.), then bore to the right, and mounted by a steep snow-covered glacier (a tributary of the Glacier des Etançons), to an upper plateau, at the head of which rose the desired peak, which from this side appears as a rocky knob, whereas from the Lautaret Hospice its lozenge-shaped snowy face is rather conspicuous. After a détour to the ridge to the S. overlooking the Glacier des Cavales (the 'Col' of M. Duhamel's map), the party then mounted in 50 minutes by a snow couloir to the crest of a buttress, and then took to the rocks of the W. face on their right. So much snow lay on the rocks that serious difficulties were encountered, and 1 hr. 40 min. consumed in gaining the summit (7 hrs. 20 min. from La Bérarde). As the peak is shut in by the higher summits of the Pic Oriental of the Meije and the Pic Gaspard, the distant view is confined; but this is compensated by the extraordinary and marvellous glimpse of, so to speak, the internal topography of the Meije. The aspect of the great S. wall, the apparent insanity of attempting to reach the Glacier Carré even by the route now usually followed, and the curiously insecure appearance of the Pic Central of the Meije, combine to make the view from this point one of the most remarkable in Dauphiné. Its position also above three great glaciers renders the view of the highest topographical interest. After building a cairn, the party regained the crest of the buttress in 1 hr. 50 min. with considerable difficulty, the base of the peak in 35 minutes more, the Hôtel du Châtelleret mainly by glissades in 50 minutes, and La Bérarde in 1 hr. 25 min.; total descent, 4 hrs. 40 min. In a season when there is less snow on the rocks, the ascent would probably be found much easier. The name of the peak is derived from the supposed resemblance of a moraine on the Glacier des Cavales at its foot to a street pavement. Some authorities attribute the name to the Pic Gaspard.

PIC JOCELME (3,437 mètres).—Messrs. Charles and Lawrence Pilkington and Frederick Gardiner, *unaccompanied by guides*, made the first ascent of this peak on July 12. Seen from La Chapelle-en-Godemar, it appears to have two summits. To each of these a distinct name has been assigned by the French Ordnance Survey, the names Bonvoisin and Jocelme being respectively given. This is a mistake, as there is only one mountain known at Le Clot-en-Godemar as Pic Jocelme; the name Bonvoisin is given by the natives of Vallouise to a fine and higher rock-peak farther east. The Pic Jocelme must not be confused with the Pic Jocelme on the ridge of Les Bans, marked 3,585 mètres, the first ascent of which was made by the above party last year. The northern faces of the Jocelme fall precipitously to the Val des Bans and the Col du Sellar; towards Le Clot a broad ridge stands out, separating the valleys leading to the Col du Loup and Sellar. This ridge rises sharply to the crest, a rocky edge, about half a mile long, running in a N.E. direction to the summit. From this ridge two spurs descend to the snow-field on the S., one from the S.W. end, the other from near the middle; beyond this second spur the S. face is covered with snow to the summit. Bivouacking under some rocks above the right bank of the glacier stream flowing from the Col du Loup, a start was made at 2.30 A.M. Mounting rapidly

up steep grass slopes directly above the sleeping-place, and crossing a kind of plateau, the broad ridge was struck in $1\frac{1}{4}$ hr. After keeping along it for half an hour, nearly two hours were lost in making a détour on the left to examine the N.W. face; not liking the look of it, the ridge was again taken, just where it begins to narrow. From here an hour's climb over excellent rocks led to the top of the first spur; on gaining which they were surprised to find that the S.E. face of the mountain was covered with snow and glacier; beyond which, farther to the S.E. rose a fine rock peak, afterwards found to be the Pic Bonvoisin of Vallouise, whose height and name are ignored in the 'Carte de l'Etat Major.' Descending on to the snow, the second spur was reached in half an hour, and the top in half an hour more; time 9.30 A.M. View good. The descent was effected by the snow-covered glacier, mentioned above. Passing first under the true Bonvoisin, then keeping well to the right, the route from the Col du Loup was joined, and the bivouac reached in 1 hr. 40 min. from the top. The ascent by the ridge is recommended; the view from it is beautiful; the climb pleasant. Those who do not object to being fleeced, will find fair quarters chez Jourdan at Le Clot.

COL DES NAVETTES—CHAILLOL CONE—MONTAGNE DE L'OURS.—The same party, *without guides*, made the first ascent of these peaks, and crossed a new col between them (for which they propose the name Col des Navettes), on *July* 15. Sleeping the previous night in a shepherd's hut, $1\frac{1}{2}$ hr. up the Val des Navettes from La Chapelle-en-Godemar, they started at 3 A.M. in very unsettled weather. Passing first over *débris* and avalanche snow to the head of the valley, then up the glacier, descending from the col between the Chaillol Cône and Montagne de l'Ours, the bergschrund was reached at 5.30 A.M. From this steep snow slopes lead up to the col; but as these slopes were covered with more than a foot of powdery new snow, they were obliged to keep to the left, and in attempting to cross to the col were forced on to the steep rocks, which were rendered so extremely difficult by snow and ice that nearly two hours were spent in reaching the ridge, a climb of about 150 feet; a few minutes more, and the col was gained. Time 9 A.M. While halting here, the mist lifted, disclosing the Chaillol Cone rising steeply up, the northern face guarded by dangerous snow. Leaving the col and passing round the southern base of the peak, an attack was made on the S.W. flank, and the top reached at 10.15 A.M., after a stiff climb of $\frac{3}{4}$ of an hour up steep loose rocks. The descent began at 11 A.M., and it was nearly midday before the foot of the final peak was regained; the col was reached in 20 min. more. Keeping along the ridge past the 'mauvais pas' of the morning, the Montagne de l'Ours (an insignificant peak marked on the Gap sheet of the 'Carte de l'Etat Major,' 3,211 mètres, a height probably belonging to the Vieux Chaillol), was reached without difficulty. From the top of this peak a steep snow slope led back to the 'bergschrund,' and in another hour the hut was regained. Time, 2.20 P.M. The Col des Navettes was afterwards completed by two of the party, *without guides*, on *August* 5. The ascent could be made direct from La Chapelle in 6 hrs., and Les Barelles-en-Champoléon reached in 3 hrs. more by de-

scending straight down from the top over easy snow slopes, and keeping rather to the left over fine alps to the Châlets de Tourond, from which a good mule path leads down to the valley of Champoléon.

COL TUCKETT—CRÊTE DU GLACIER BLANC, or PIC DES AGNEAUX (Pic Signalé, 3,660 mètres).—Messrs. Lawrence Pilkington and Frederick Gardiner, *without guides*, made a new pass, which they wish to call Col Tuckett, effecting a new ascent of the peak marked in the map Pic Signalé, 3,660 mètres *en route*. Sleeping at the foot of the Glacier de Monestier in the Val di Tabuc, under a roof of fir and juniper, made by them on discovering the non-existence of the 'Refuge Chancel,' marked in M. Guillemin's map, a start was made on the morning of July 30, at 1.30 A.M. Mounting up the Glacier de Monestier for 1½ hr., and then bearing to the right across undulating snow fields, they struck the southern ridge of the Pic Signalé, reaching the depression nearest that peak at 6.45 A.M. Turning along the ridge, a climb of 40 minutes over loose rocks on the E. face, brought them to the top at 7.30 A.M. This being the highest point of the group NE. of Les Ecrins, the view is extensive, but not so grand as from the neighbouring and lower Pic des Arcas. On a cairn on the summit a champagne bottle was found, in it Mr. Coolidge's card. After staying an hour on the top, they returned in 30 minutes to the Col. From here a descent was effected on the western side. Keeping down for about 20 minutes to the head of an icefall, but not liking the look of it, they climbed over a ridge on the left and down a couloir and rocks on the other side to a lower snow field just under the icefall. From this the glacier broadens out, and was descended without any great difficulty, and the Hôtel Tuckett reached at 10.50 A.M., from which the usual way to Vallouise was followed. The exact height of the Col was not taken, but it cannot be much under 11,500 feet. M. Guillemin has restored the name Pic des Agneaux (see Bourcet's map) to the Pic Signalé, 3,660 mètres, which is the name given to this peak in Bourcet's ancient map of Dauphiné. This expedition can be strongly recommended, both for the interesting nature of the climb and the superb views on both sides of the pass and from the Pic Signalé.

PIC BONVOISIN (3,506 mètres); COL DU LOUP.—The same party, *without guides*, made the first ascent of this peak on August 1. This is the mountain known at Ville Vallouise (from which place it is very distinctly seen), as the Pic Bonvoisin; its name and height are both ignored by the French Government map, but the long eastern ridge is marked Crête de Bonvoisin. It is the highest point in the semicircle of peaks between the Pic des Opillous 3,506 and Sirac 3,438 mètres. The name Bonvoisin having been incorrectly given by the French surveyors to one of the secondary peaks of its neighbour, the Jocelme, the above party suggest that its proper name be restored to it. Sleeping at a shepherd's hut in the Vallon de la Selle, 2 hrs. above Entr'Aigues and 4 hrs. above Ville Vallouise, on the night of July 31, a start was made next morning at 1.30. After wasting 2 hours in trying a route pointed out by the natives, the Col du Loup was crossed at 8 A.M., probably at the same place taken by Mr. Coolidge. Hurrying

down the snow slope on the western side for nearly a thousand feet, they turned sharply to the right, up a steep arm of the glacier flowing from the Pic Jocelme, which landed them at the foot of the Pic Bonvoisin. On this side the mountain presents a rocky face very jagged at the top; to the right a bay of snow runs some distance up the face. This snow had been fixed upon as the route for the ascent, but as some falling stones were seen it was decided to try the rocks near the edge of it. Starting afresh at 10.45 A.M., and mounting for half an hour over rocks and snow they turned a little to the left up steep loose rocks, and in half an hour more a lower summit was ascended by mistake, from which the true summit was seen towering up in the direction of Vallouise. The ridge connecting the two peaks seemed to be a collection of small towers, at the end of which a large one rose high above the rest; beyond it was the top. After an hour's up-and-down climbing under the smaller towers, the foot of the large one was reached; then followed a rough awkward scramble to the arête beyond. Keeping along this (except where a cleft had to be passed by descending on the northern side), the top was reached at 12.20. It lies at the E. end of an almost level arête, the mountain falling away sharply on either side. Beginning the descent at 1 P.M., and returning to the foot of the big tower, the morning's route was followed until directly above the point where the rocks at the foot of the peak were ascended; striking straight down to these by a low mound-like ridge, the snow at the foot of the peak was regained at 3.20 P.M. The Col du Loup recrossed at 4.40 P.M., and the hut in the Vallon de la Selle re-entered at 6 P.M. This ascent could be made with less fatigue and in less time from Le Clot-en-Godemar; but it is not an expedition to be recommended, the danger from falling stones being quite unavoidable. The route taken on the descent is probably the safest.

PIC VERDONNE, OR CIME DE CHABOURNEAU (3,324 mètres).—The same party, *without guides*, made the first ascent of this peak on August 3. Passing the previous night in a ruined hut half an hour above Chaumeille in the Val de Champoléon they started up the valley at 1.40 A.M. Reaching in a few minutes the point where the stream divides, the branch running from the Pas de la Cavale was crossed (not without difficulty), and the left bank of the other followed to the head of the Vallon de la Pierre, as the N. glen at the extreme head of the valley of the Drac is locally called. (Bourcet calls it by the same name.) Making their way up the steep grass slopes beyond, they reached the easier slopes below the large nameless triangular glacier between the Pic Verdonne and the Crête des Bouchiers at 5 A.M.; here a good view of the peak was gained. Rising straight up from the glacier, it appears double-headed, the summit being on the extreme right. To the left the mountain sinks gradually down to a depression, from which a couloir falls to the glacier below; crossing the glacier and mounting this couloir the depression was reached at 6.15 A.M. Turning to the right, and holding a nearly level course over the steep loose western face, they struck up to the crest of the mountain beyond what had appeared a lower peak from the glacier on the southern side. In a few minutes more the top was reached by a good firm arête. Time

7.30 A.M. Remaining an hour on the top, they then descended by the same route, the depression being reached at 9.15 A.M., and the hut easily at 11 A.M. Rather more time should be allowed for this expedition, as the latter part of the ascent was much hurried to avoid falling stones which evidently fall later in the day. This peak is known as Pic Verdonne at Champoléon and Cime de Chabourneau at Le Clot-en-Godemar.

VAL CHAMPOLÉON; SIRAC (3,438 mètres); VIEUX CHAILLOL.—The same party, *without guides*, visited the Champoléon district, hitherto almost unknown to English travellers, and on August 4 made the second ascent of Sirac and the first from Champoléon. Passing the night of the 3rd at the miserable village of Les Auberts, they started at 2 A.M. up the Val d'Issora for the Col de Vallon Pierre, crossing which, and skirting under the S.W. ridge, they climbed slightly to the right of the western glacier, and completed the ascent by the route taken by Mr. Coolidge in descending. They returned to Les Auberts at 2.30 P.M.

On August 5, the same party, *without guides*, made the ascent of the Vieux Chaillol—first ascent by English mountaineers. The ascent is monotonously easy, and it has been frequently made by the people of the country. The monotony of the ascent is amply repaid by the superb view from the summit, comprising nearly every peak of importance in Dauphiné, and an extensive view of the hill and dale country to the south.

The Champoléon Valley had been entered from Vallouise by the Pas de la Cavale, a pass well known in the district. It is made up of two cols on either side of the peak, marked 2,897 mètres, at the head of the Val de Fournel. Another way of crossing over from Vallouise to Champoléon is by a col leading from the glacier S.E. of the Col du Loup to the glacier S.E. of the Pic Verdonne, locally known as Col du Loup de Champoléon. The head of the Val Champoléon is desolate in the extreme, the highest settlement is Chaumeille; but the mountaineer will find better quarters at Les Auberts, about $\frac{3}{4}$ hr. lower down the valley, from which there is a good mule path, leading in $1\frac{1}{4}$ hr. to Les Barel, from which the Val Godemar may be reached by the high glacier Col des Navettes in 9 or 10 hours. About six miles farther down than Les Barel, very fair quarters may be found at the inn at Le Pont du Fossé.

Besides the new expeditions described in the foregoing notes, Messrs. Charles and Lawrence Pilkington and Frederick Gardiner effected the following expeditions *without guides* :—

July 7th.—Fourth ascent of the Aiguille du Plat, 3,602 mètres, ascending from and descending to St. Christophe, by Mr. Coolidge's route.

July 9th.—From St. Christophe to Le Désert-en-Jouffrey, by the Col des Berches.

July 10th.—From Le Désert to La Chapelle-en-Godemar, by the Col de la Vaurze.

July 17th.—Fourth ascent of the Pic Olan. Reached the central peak at 8 A.M., in $3\frac{1}{2}$ hrs. actual walking from the glacier. This is the

peak ascended by Mr. Pendlebury. The party was caught in a very severe snowstorm, and therefore unable to proceed to Mr. Coolidge's peak only about an hour distant; it seemed to them about 6 feet higher than the summit on which they stood; this, however, is a disputed point—Messrs. Guillemin and Salvador de Quatrefages incline to the opinion that Mr. Pendlebury's peak is highest.

July 19th.—From Le Clot-en-Godemar to La Bérarde, by the Col du Says.

July 25th and 26th.—Fourth Ascent of the *Grand Pic de la Meije*, 3,987 mètres.

July 28th.—Crossed the Col des Cavalles from La Bérarde to La Grave.

August 2nd.—Crossed the Pas de la Cavale from Entr'Aigues to the Valley of Champoléon.

M. Duhamel sends the following notes:—

COL DES CORRIDORS DE LA MEIJE.—From the Glacier de la Brèche to the Rocher de l'Aigle—8 hrs. from the N.W. foot of the W. peak to the Rocher de l'Aigle. Guides, Pierre Gaspard and Giraud Lézin. A climb up ice slopes, exposed to continual falls of séracs—too dangerous to be recommended for repetition. This was the unanimous opinion of our party.

COL DE CLAIRE, between the Pic Gaspard and the Pic de Neige de Lautaret.—Ascent of 6 hrs. from Villard d'Arène to the col by the Glacier de l'Homme, up rocks and ice couloirs. Descent in 3 hrs. by the Glacier Supérieur des Cavales to the Refuge de l'Alpe. The descent is exposed to falls of rocks.

COL DE CASTELNAU, between the Pavé and the Col des Aigles (N. of the Col de Chamois).—5½ hrs. from Refuge de l'Alpe to col. Descent to La Bérarde 4 hrs. 30 min. Magnificent view.

ROCHER DE L'ENCLUA. **COL DE PETIT PIERRE**, between the Rocher and Pic de Clochâtel.—5½ hrs. from La Bérarde to col, by Glacier du Vallon des Etages. Ascent of peak (the first recorded ascent) 1 hour; descent, by Glacier du Chardon to La Bérarde, 4 hours.

COL DE L'ÉTRET, between the Tête de l'Étret and the Pic des Etages. Ascent in 6 hrs., from La Bérarde; descent to St. Christophe in 5½ hours.

COL DE LA GANDOLIÈRE, between M. de Castelnau's Col de la Selle and the Tête de la Gandolière.—5 hrs. up from St. Christophe; 1 hour descent to the Hôtel du Châtelleret in the Vallon des Etançons.

Graian Alps.

POINTE DE CERESOLE, OR PIC DE LA LUNE (3,787 mètres).—*August 5.* Mr. G. Yeld, with Alphonse Payot of Chamonix, and Léon Guichardaz of Cogne (as porter), left a royal hunting châlet (in a semi-ruinous state) about 2 hrs. 45 min. from Cogne, at 3.15 A.M. Having climbed up by the buttress of rock between the ice-falls of the Tribulation Glacier, they reached the foot of the peak to the left of the Col Chamonir, and ascended—partly by snow, partly by rocks—to what seemed to be the summit, but when this was reached, it was seen that

the true summit was more to the east; this was reached in 15 minutes by an interesting rock climb. Approximate times: from ch  let to summit, about 6 hrs.; descent to Cogne about 5 hrs. This is believed to be the first ascent from Cogne.

ONDEZANA (circa 3,550 m  tres).—*August 7.* The same party left Cogne at 2.8 A.M. They struck the ridge which divides the Valeiglia from the Val Piantonetto almost halfway between the Ondezana and the Col Telleccio, and then passing along this ridge turned to the right, and struck the south-west ar  te of the Ondezana itself at 8.50. The view from this point was very fine. The summit, which was reached at 9.20, commanded a magnificent prospect, including part of the plain of Italy. They turned to descend at 11, and reached Cogne, without any hurry, at 3.43 P.M. This expedition can be strongly recommended. The climb, after the Valeiglia Glacier is reached, is interesting in itself, and the scenery equally so. In less snowy seasons it is possible that the couloir to the east of the Ondezana might offer a shorter route. The mountain has been several times climbed before, by Signor Baretti; from Valsoera, in 1877, by Signor Montaldo; and from Cogne from the S.W. in 1878, by Signor Marinelli.* Five bouquetins were seen on the ascent, and two on the descent.

GRANDE SERRE (3,600 m  tres).—*August 9.* The same party left the H  tel de la Grivola at 1.50 A.M. to make the first ascent of this peak from the Cogne side. Having ascended to the Col de l'Herbetet, they followed the ar  te leading up from it for some time, then traversed snow slopes on the Val Savaranche side; and again taking to the ar  te, reached the top at 9.25. They left the summit at 10.5, and crossing the Glacier de la Grande Serre struck the route of the Col de Lauzon, a little above the 'campement du roi.' Cogne was reached at 1.20 P.M. This peak was first ascended from the Val Savaranche side in 1875 by Signori Vaccarone and Gramalgia.†

GRAND PARADIS. FROM THE POINTE DE MONTANDAYN  .—*August 11.* The same party left a ch  let about 3 hrs. 20 min. above Cogne at 1.45 A.M. For about 45 minutes they followed the route of the Col de l'Herbetet, and then turning to the left gained the Dzasset Glacier. They then descended the cliffs which separate the Dzasset Glacier from the Plan de la Tribulation by a rather difficult couloir. The Pointe de Montandayn   was reached at 9.35. They then ascended the Grand Paradis by the great northern ar  te, keeping the actual ridge, except where they had to pass two patches of ice-fringed rocks, with a steep ice couloir between, which they crossed a little below the ar  te on the Val Savaranche side. The summit was reached at 11.46. They descended to Ceresole by the Col de Mont Corv   and Colle della Torre; but, owing to a dense mist which prevailed below the Breuil basin, did not gain the Stabilimento till 8.53 P.M. (having left the summit at 1.0 P.M.)

* *Bollettino del Club Alpino Italiano*, No. 39, p. 392.

† *Bollettino del Club Alpino Italiano*, No 36, p. 500.

Mont Blanc District.

AIGUILLE DU DRU, W. PEAK.—On *August 29* three Chamoniards—Jean Charlet of the Club Alpin Français, Prosper Payot, and Frédéric Folliguet—made the first ascent of this peak. It is seen from Chamonix in front, and to the left of the (67 feet) higher E. peak, which is also visible from the village.

AIGUILLE DU CHARDONNET.—On *August 1* Mr. Percy W. Thomas, with Joseph Imboden and J. M. Lochmatter, made the first ascent of the Aiguille du Chardonnet from the Glacier du Tour.

Leaving Argentière at 2.40 A.M. they followed the right bank of the Gl. du Tour, and gained the summit at 11.10 A.M., the latter portion of the ascent being varied by a rock climb of unusual interest. They returned to Argentière at 8.25 P.M. This would appear to be the second time only the mountain has been ascended, no one having been up since Mr. Fowler made the first ascent from the Argentière Glacier in 1865. It is surprising that such an interesting expedition should have remained so long unnoticed, as not only is the climb not to be despised, but the view from the summit is superb.

AIGUILLE DE TALÈFRE (12,287 feet).—On *August 25, 1879*, Messrs. F. J. Cullinan, J. Baumann, and Gerald Fitzgerald, with Laurent Lanier and Emile Rey of Courmayeur, and Joseph Moser of Täsch, as guides, made the first ascent of the Aiguille de Talèfre.

Starting from the Montanvers at 2.15 A.M. they reached the lower end of the Glacier de Pierre Joseph, and ascending that glacier gained the rocky face of the Aiguille to the right of two broad snow couloirs, which descend from the Aiguille to the glacier. The party then bore to the left, crossed the two couloirs not far from their base, and ascending the rocks for a short distance, recrossed the left-hand couloir, and reached a small rocky ridge lying between the two couloirs. The party climbed along this ridge which led straight up to what had appeared to be the highest summit of the Aiguille; but on reaching it, another summit, apparently a few feet higher, to the north of, and joined to the first one by a short snow arête, was discovered. This latter summit was attained at 10.25 A.M. The view from the summit was very fine, and no difficulty was found in the ascent; but the rocks all through, though otherwise easy, were extremely unsound, and some danger from falling stones exists, in the descent especially, in crossing the lower part of the couloirs. Lanier led, faultlessly, throughout the expedition, which was planned by him.

Pennine Alps.

MITRE DE L'EVÊQUE.—*Sept. 22.* Mr. Cust, with the guides Jean Martin of Vissoie and Pierre Beytrison of Evolena, made the first ascent of the peak, intermediate in height and position, between Mont Collon and l'Evêque. The above name is proposed for it, as the mitre-like aspect of its double summit seen from the Arolla side may have aided the naming of its higher neighbour.

Leaving Arolla at 8.20 A.M. they ascended from the Arolla Glacier the broad snow couloir S. of Mont Collon to a gap at its head on the side away from the latter (5¼ hrs. walking), utilizing the steps made

two days previously, when Mr. Cust, with Martin, crossed this gap, returning by the Col de l'Évêque, circumstances having then prevented a further attempt on the peak. The arête was followed to the final rocks, which were scaled by a difficult climb of some 25 ft. on the E. side. This may be avoided by a traverse on to the other side. The summit, a narrow point of rock, about 750 ft. above the col, was reached in 2 hrs. 9 min. from the latter. An easy descent was made on the W. side, partly by the rocks and partly by the snow couloir between the two summits in $\frac{3}{4}$ hr. to the foot. Missing the Col de l'Évêque in a thick mist, they descended from the main ridge directly by the rocks to the Glacier de Collon, reaching Prerayen at 6.10.

COL DES ROUSSES, COL DE BLANCIEN, BEC DE BLANCIEN.—Sept. 23. The same party made a new pass from Prerayen to the Otemma Glacier. Leaving Prerayen at 5 hrs. 40 min., they ascended a snow couloir on the W. side of the Combe d'Olen, opposite the Glacier de Collon, leading to an easy snow col at the head of a side valley descending to the Valpelline, above Bionaz. The couloir is broad and of a slight inclination; but its lower part being exposed to stones from the rocks at the side, it is desirable to pass it early. Walking time, to foot, 2 hrs. 5 min.; to top, 1 hr. 21 min.=3 hrs. 26 min. from Prerayen; height (by aneroid) about 10,950 ft. Easy snow slopes on the right led in $\frac{3}{4}$ hr. to a gap in the main ridge, height about 11,700 ft., commanding a splendid view, uninterrupted, except on the Blancien side. To this it is proposed to give the name *Col de Blancien*. The lower col is not likely to be used separately, but might be called *Col des Rousses*.

W. of the upper col is a low summit, which may be reached in a few minutes, forming the highest point of the main ridge at the head of the snow valley descending to the Otemma Glacier. Beyond this is a deep depression, in which lies the Col d'Otemma. E. is the S. summit, (of which the first ascent apparently was made by the present party), on the lofty ridge, nearly a mile long, variously called La Sengla and Bec de Blancien (Reilly). This ridge is rugged and broken in the middle, rising into peaks at either end, which deserve separate consideration. The Federal map gives the name La Sengla to the main ridge, and Blancien to that descending from the S. end to the Combe d'Olen. The former name being reserved for the higher N. peak, the name *Bec de Blancien* is proposed for the S. peak. It is 12,015 ft. in height, is easily reached from the col (in little over $\frac{1}{2}$ hr.), and affords a panoramic view of surprising beauty. The Otemma Glacier was reached by an easy descent in 37 min., and Arolla, by the Pièce Glacier, in 3 $\frac{1}{2}$ hrs. walking, from the col.

The Col de Blancien offers one of the finest passages in this part of the Alps. It may be taken from Arolla to Bionaz; but is especially available from Prerayen to Chermontane, the Otemma Glacier being reached in less than 5 hrs. from Prerayen.

Monte Rosa District.

MATTERHORN BY THE ZMUTT ARÊTE.—September 2, 3. Mr. A. F. Mummery, Alexander Burgener, T. Petrus, and A. Kentinetta, left a 'gîte' about 1 hr. above the Zmutt Glacier at 4.15 A.M., and climbing by easy

rocks on to the snow arête, reached the rocky teeth at the end of it without difficulty. Beyond these teeth the arête became impassable, and it was necessary to turn to the left up a very steep slope of loose rock mixed with ice and snow. From the top of this the arête was again followed for a short distance, when it became easy to turn to the right and climb straight up in the great couloir, on to the ledge traversed by the Italian guides in the first ascent from Breuil. Regaining the Zmutt arête at 1 P.M., the summit was reached at 1.45 P.M.

THE MATTERHORN FROM THE TIEFENMATTEN GLACIER.—On *Sept. 3* Mr. W. Penhall, with Ferdinand Imseng and Louis Zurbrücken, ascended the Matterhorn from the Tiefenmatten Glacier, reaching the top after Mr. Mummery's party.

'Leaving Zermatt at 10 P.M. on the 2nd, we went up the Zmutt Glacier to a point nearly opposite the Stockje; then climbed a snow slope on the left, above which some rocks soon brought us to the head of the Tiefenmatten Glacier, where we waited for daylight. We then crossed the face of the mountain diagonally to the gully on the right, or south, side of the Zmutt arête. The gully was passed almost horizontally, and we struck the arête near, but probably rather below, the point where the Italian guides got on to it in the first ascent from Breuil. The rocks of the face were steep and difficult, though for the most part firm. In the middle of the ascent we lost over two hours, having to retrace our steps for some distance.

'The time occupied from the glacier to the top was 10½ hrs., or, excluding halts and time lost, 7 hrs. actual walking.'

Mr. Baumann sends the following note:—

'On September 5, I engaged Petrus as leading guide, and started with my own guide, Emile Rey, at 3 P.M. for the Matterhorn by the new route. At 8 P.M. we reached our sleeping-place at the foot of the great ice slope which forms part of the Zmutt arête. At 4 A.M. on September 6 we commenced operations, and making use of the footsteps cut up the ice slope by Mr. Mummery's guides, reached the rocks at 5 A.M. In another hour we arrived at the overhanging rocks, a point which had been described to me as very difficult and even dangerous; but coming as I did straight from the really formidable rocks of the Dru, I found it simply an interesting rock climb, presenting no extraordinary difficulties. This point is turned by leaving the arête, and taking to the face of the mountain to the right of the arête; and I have the intention (if you can find space for me in the "Journal") of elaborating a view of the mountain from this side, and indicating the exact route followed by us. At 8.45 we arrived at the summit, having spent a good half-hour over breakfast. The actual climbing did not occupy more than 4¼ hrs., and I am of opinion that this ascent by the Zmutt arête will in future become the favourite way of crossing the Matterhorn for those who appreciate a good and not too dangerous rock climb. The greater part of the ascent is effected on the arête, consequently the danger of falling stones is reduced to a minimum.'

THE WEISSHORN, FROM ZINAL.—*Aug. 12, 13.* Mr. G. A. Passingham, with Ferdinand Imseng and Louis Zurbrücken of Macugnaga, as guides, having slept at the base of the Zinal cliffs of the Weisshorn,

climbed straight up their face to the summit in $11\frac{1}{2}$ hrs. from the bivouac. They descended to Randa by the usual route. Full particulars of this difficult climb will be given in the next Number.

ALPHUBELHORN.—'On August 8 I left the Täsch Alp Châlet at 3.55 A.M., accompanied by the guides Peter Taugwalder and Abraham Imseng, for an ascent of the Alphubelhorn by the western face. We followed the ordinary route to the Mischabel Joch for a short distance, and then crossed the Weingarten Glacier to a point nearly under the summit of the mountain. We attacked the rocks at 6.55, and found them continuously difficult throughout the ascent, for not only were they much glazed with ice, but the dip of the strata was outward: we observed, however, exceptionally few falling stones. Two short ice couloirs were ascended with considerable labour and expenditure of time; a third proved to be impracticable, and we were obliged to retrace our steps as far as the bottom of the second one. We then took a northerly course, which led us along some narrow ledges of rock, and eventually found a passage to the summit, which was not gained till 4.45 P.M. We descended to the Alphubel Joch, and had some little trouble on a steep snow wall not far from the summit. I believe now that had we followed the northern arête to the Mischabel Joch, we should have saved time considerably; as it was, we did not reach the Täsch Alp until 8.55; Zermatt, until 11.15.

'This expedition affords an admirable rock climb, and is well worthy of repetition.

W. W. RICHMOND POWELL.'

THE NADELHORN.—On *September 7* Messrs. W. Penhall and A. F. Mummery, with Alexander Burgener and Ferdinand Imseng, ascended the peak marked Nadelhorn, 4,334 mètres, in Dufour's map. Sleeping 3 hours above Randa, in the Dürren valley, they went up over some loose rocks for 2 hours, then crossing a small snow-field, climbed an interesting rock slope to the north-western arête, which was then traversed to the top. In the descent they made straight for the right bank of the Hohberg Glacier.

The ascent occupied 6 hrs., and the descent 4 hrs.

The 'Alpine Guide' says that this peak was 'probably' reached by Mr. Chapman in 1856 from Saas, and Studer* mentions an ascent in September, 1858.

FLETSCHHORN, from the upper level of the Laquin Glacier.—*August 29*, Mr. F. Mummery, Alexander Burgener, and Augustin Kentinetta left a 'gîte' on the N. bank of the Laquin Glacier at 3.30 A.M., ascended by the Fletsch Joch route till opposite two large couloirs leading up the Fletschhorn; having climbed the arête dividing these couloirs, they struck straight up the face of the final peak over extremely smooth rocks; the top of these being attained, a short ice arête led to the highest point.

THE WEISSMIESJOCH.—On *September 10* Messrs. R. Gaakell and M. Holzmann, with J. P. Zurbrücken as guide, and Ferd. Furrer as porter, having ascended the Weissmies by the usual route from Saas, descended on the other side, partly over rocks, partly over snow slopes, into the Zwischenbergen valley, to about 1,000 feet below the

* *Ueber Eis und Schnee*, ii. p. 53.

Zwischenbergen pass, where the trough of the valley for a short distance bends to the S., in order to go round the rocky spur projecting in the same direction from the Thälhorn. They there turned to the left, and gradually re-ascended over some *débris* to a small glacier on the W. side of that spur. Near the upper end of the glacier they climbed through some rocks to a depression in the ridge, between the Weissmies and the Thälhorn, less than $\frac{1}{4}$ mile to the W. of the latter peak, and about 11,050 feet high, reaching the crest in 2 hrs. 5 min. from the top of the Weissmies. A very steep ice slope, which early in the season may be of snow, descends to the Laquin Glacier. Instead of turning to the right, where the slope leads unbroken to the névé of the glacier, Zurbrücken preferred to go down to the left towards the bergschrund, as a few patches of rock jutting out from the ice, and some broken séracs, which at one time partly blocked up the Schrund, promised to shorten the time of step-cutting. It, nevertheless, took 2 hrs. before they gained the lower lip of the Bergschrund. Thence, they descended as much as possible by the left side of the Laquin Glacier, and arrived without further obstacle in 1 hr. at its foot. Instead of descending into the Laquin valley, they crossed over the left moraine, kept high above the left bank of the valley, along the stony pasture of the Hohsaas, struck into a track which for some time follows an old aqueduct, and, turning into the valley of the Doveria, descended by the châteaux of the Wengen Alp in $2\frac{1}{4}$ hrs. to the village of Sempeln.

It appears that the Weissmies has been ascended from the Laquin Glacier directly by the rocks, but at a considerable distance to the N. of the pass described. Tschudi, who has adopted the name of Weissmiesjoch for the pass made by Messrs. King and Riddell, between the Thälhorn and Tossenhorn, although Ball, with Mr. King's sanction, has more properly called it 'Thäljoch,' erroneously states that this pass leads over the Laquin Glacier, whilst in reality it touches only the Thäli Glacier.

Bernese Oberland.

KASTEN JOCH.—On Friday, August 22, the Rev. F. T. Wethered and Mr. E. P. Wethered, accompanied by two guides of Guttannen, crossed from the Oberaarhütte to the Æggischhorn by a well-marked Joch, situated directly to the south of the Oberaar Joch, and forming an outlet from the extreme S.W. corner of the Oberaar Glacier, on to the Studer Firn. 'The pass is separated from the Oberaar Joch by a peak, well delineated in the Federal and (English) Alpine Club Maps, but no name is given to it by either authority. It is, however, denoted as the Kastenhorn in the "Panorama from the Æggischhorn," hanging on one of the inside walls of the "Hôtel de la Jungfrau." The Joch is flanked on the south by the W. end of the ridge which bounds the Oberaar Glacier along its entire right bank. I estimate its height at from 250 to 300 English feet in excess of the Oberaar Joch. The ascent presented no difficulties of any sort owing to the excellent condition of the névé on the upper (S.W.) slope of the Oberaar Glacier, and the descent from the Joch to the Studer Firn, although steep, was quite easy.

'The route from the Oberaarhütte is identical with that of the Oberaar Joch for about $2\frac{1}{4}$ hrs. Then, diverging to the left on nearing a broken part of the glacier, the summit of the pass was reached up steep névé, which must sometimes be ice, in $1\frac{1}{4}$ hr. more. On gaining the Studer Firn, opposite the Rothhorn (3,549 mètres, Fed. Map), from the Joch, we struck again into the usual Oberaar Joch route and followed it along its weary way to the Äggischhorn hotel. The pass which forms the subject of this note would appear to have been crossed some ten years ago by two Grindelwald guides and a traveller in mistake for the Oberaar Joch, which they missed in a fog between the Äggischhorn and the Grimsel; but, as it is altogether unchronicled, and as the Joch itself, although well defined and altogether distinct from the Oberaar Joch, is entirely ignored—nameless and heightless—by all the accredited maps and guide-books, I make no apology for cataloguing it amongst the "New Expeditions" of 1879, as a useful Oberland pass, and calling it "the Kasten Joch."

F. T. W.'

Lepontine Alps.

LEBENDUN PASS.—*October 7.* Mr. Cust, with Imboden of Andermatten as porter, leaving Andermatten at 3.35 A.M. reached at 7.53 the pass leading from the Lebendun Valley to the Hohsand Glacier E. of the Ofenhorn. This easy pass is unnamed, and should be called the *Lebendun Pass*. The Hohsand Glacier having been crossed, the nameless depression between the Blinnenhorn and Rothhorn was reached in 1 hr. 10 min., walking from the glacier without difficulty. View good. The descent was made by the Gries Glacier and back to Tosa Falls. This glacier route is a fine day's excursion from Tosa Falls for those who do not wish to cross to the Valais.

ANTABIA GLACIER PASS.—*Oct. 8.* The same party, starting from Tosa Falls and bearing from the Castello ridge in the direction of the Tainierhorn till the upper glacier was gained, reached the depression between the Basodine and Tainierhorn. From there they ascended the S. summit of the Basodine, easily reached, and commanding all but a small section of the extensive view from the higher N. summit. Returning to the col, they found easy access to the Antabbia Glacier by a convenient chimney immediately N. of the Tainierhorn ridge in a low rock wall.

This pass, for which the above name is proposed, is situated between the Basodine Pass and the Tainier Pass (ascending from Fruthwald), and offers an agreeable and considerably the most direct passage between Tosa Falls and Bignasco.

Tödi District.

OBERALPSTOCK.—On *August 12*, the Rev. F. T. Wethered and Mr. E. P. Wethered, with A. Baumann of Amsteg, ascended the Oberalpstock, *vid* the Regenstalden Firn, a route which had, to their knowledge, only been used once before (by Mr. Holzmann), and then as a descent.

'Crossing the Rupleten Alp diagonally from the Waldibalm Châlets, we reached the foot of the Regenstalden Firn, with the Bander Stock

on the E., and thence took to the névé. At first the slope was gentle, but afterwards became very steep, and we were driven eventually on to the rocks upon our right, which run down towards the Maderanerthal. (These were the first rocks we touched in the ascent.) Alternating between these and the snow, we reached at length the summit of the ridge in which the névé culminates lying north of a depression, from which—first a lower, or northern, and then, immediately behind it, a higher and southern peak rises from the snow. This latter is the true summit of the Oberalpstock. We had some difficulty in rounding the E. basement of the first of these two peaks, on account of having to pass along the upper edge of an extremely steep snow-field, which heeled uncomfortably over to a *Schrund* immediately beneath our line of progress. Skirting thus the first peak, we reached before long a narrow col, which separates it from the actual highest peak; and after a short scramble up good rocks, found ourselves upon the summit. Mr. Sowerby ventures a doubt as to the practicability of reaching the highest point from the Maderanerthal direct, on account of the probable impossibility of crossing the depression between the ridge and the summit peak.* In the condition of the snow just under the northern peak as we found it, the transit to the base of the other and more southern was rather difficult, but did not detain us long. We had hoped to ascend the northern peak as well, but, being rather late, had reluctantly to give up the "double event." The northern peak remains untrodden so far as I know. I recommend the ascent from the Regenstalden Firn, in preference to the Brunni Glacier route. We descended by the latter to the hotel in the Maderanerthal. F. T. W.'

Örteler District.

ÖRTELER, FROM ENDE DER WELT FERNER.—On June 27, Herr Otto Schück, with Peter Dangl and Peter Reinstadler, started from Sulden at 1.30 A.M. to make a push for the summit of the Örteler, by the great couloir leading up from the Ende der Welt Ferner. 'Mounting through the woods of the Kuhberg, we reached this glacier at 3 A.M., and at 3.30 the base of the couloir; in ascending which the next $7\frac{1}{4}$ hrs. were spent, always cutting up well to the left of the deep trench carved out by stones and avalanches in the centre of the gully, down which the powdery snow of the upper slopes flowed continuously like a river. The day being gloriously fine and the snow in first-rate order, we reached, without any incident worth mention, the top of the couloir, where it melts into the final slope of the mountain. For about 300 ft. we continued step-cutting up this face; then with a view to shorten the work, we made for the cliffs to our left, obtaining, however, nothing save a considerable loss of time and a very stiff scramble up the glazed and rotten rocks. Crossing again to the snow, we got to a little lateral gully of remarkable steepness, bounded by a low ridge of snow, which proved to be hollow underneath. Up this snow-crest we worked, until it again abutted against the rocks, which we clambered straight

* *Alpine Journal*, vol. iii. p. 266.



THE HUT ON THE ZERMATT SIDE OF THE MATTERHORN.

FROM WHYMPER'S ASCENT OF THE MATTERHORN.

up to the summit-ridge, reaching it about 15 yards N. of the actual top. (Time, 1.15 P.M.) The descent was taken by the ordinary way to Salden. Peter Dangl, who led splendidly all the day, proved to be first-rate as ever.

'It has been said that stones and avalanches are liable to be so frequent on this route, as to make unjustifiable the risk incurred in the expedition. I am not prepared to express any opinion on this subject; at any rate, it is tolerably sure that in bad weather, or in a less perfect condition of the snow, the risk of stones and avalanches in the couloir will be a considerable one. Yet future travellers will do well not to take to the rocks on either side, but to follow the gully from bottom to top.'

Primiero Dolomites.

CIMA DI CANALI.—August 30. Mr. C. C. Tucker, with Michele Bottega of San Martino, made the ascent of the peak, known in the country by this name, probably the fourth in height of the Primiero summits. It is situated on the spur overhanging Val Pravitale and to the S.W. of the Cima di Fradusta, and consequently does not correspond to the C. di Canali of the old Lombardo-Venetian survey. In the new Austrian Map the name is given to the Cima di Fradusta with a height of 2,927 mètres. 'Starting from San Martino at 3 A.M. we reached the Passo di Ball (Rodera) at 5.25. The Cima di Canali was climbed from the little lake lying between it and the Palle di San Martino, first by a steep snow gully, and afterwards by the sheer and difficult rocks on its left-hand side. These led to a secondary summit, from which the true top was gained without serious difficulty at 9.15. No indication of the peak having been climbed was found on the summit, and neither my guide nor Santo Siorpaes had heard of any previous ascent. The height of the peak may be taken as about 10,000 ft. It probably out-tops the Cima di Fradusta by a few feet, but the superiority is at best a trifling one. The descent was made by the same route, and San Martino reached at 3.15 P.M. The expedition is a very fine one throughout, and here and there of considerable though not excessive difficulty. Michele Bottega proved himself upon this, as well as upon other expeditions, an active and competent cragsman, as well as a cheerful and pleasant companion.'

ALPINE ACCIDENTS IN 1879.

THE past season has been unusually fruitful in accidents to mountain travellers; but they have, with two exceptions, not been 'Alpine accidents' in the sense in which we use the word. They have happened on car-roads, on mulepaths, or among the slopes of the lower mountains to tourists who, from botanical zeal or lack of a guide, had wandered from the track. Among the deaths chronicled under this heading in our daily papers were those of two wild-haycutters, and of a peasant employed in cutting glacier ice for export in the Oberland.

Of the three deaths which occurred above the snow-level, two only

can be classed as 'Alpine accidents.' The third must be dealt with separately.

The following letter from Mr. C. E. Mathews, the President of the Club, which was published originally in the 'Times,' gives all necessary information as to the accident by which our Club lost one of its members:—

'Mr. William O. Moseley, M.D., of Boston, United States of America, was travelling in the Alps, in company with Mr. W. E. Craven. Both gentlemen were members of the Alpine Club, and both were accomplished and experienced mountaineers. They had secured the services of two of the ablest of the Oberland guides, Peter Rubi and Christian Inäbnit, both of Grindelwald.

'The party of four left Zermatt at 10.30 on the evening of Wednesday, August 13, intending to ascend the Matterhorn and return in one day, and so to avoid the necessity of camping out in the wretched hut on the north side of the mountain. They reached the summit in safety at 9 o'clock on Thursday, the 14th, Mr. Moseley having more than once complained of the rope as being, in his opinion, rather a hindrance than an advantage. After a halt of about twenty minutes, they commenced the descent, crossed the shoulder, and descended the difficult rocks, over which an iron chain is stretched. Mr. Moseley did not use the chain, and the party arrived at a point about three-quarters of an hour above the hut.

'The recognised difficulties of the mountain being now passed, Mr. Moseley asked that the rope might be taken off, when both Peter Rubi and Mr. Craven urged him to keep it on until they reached the hut. A few minutes later, Mr. Moseley again became impatient, and released himself from the rope, saying he could do better without it. Rubi then yielded, the rope was removed from the other members of the party, and they proceeded rapidly downwards. About twenty minutes from the hut they had to cross a projecting piece of rock with a smooth surface. Rubi crossed first, and planted his axe, so as to give Mr. Moseley, who followed, a firm foot-hold. Mr. Moseley, however, declined assistance, and placing one hand upon the rock endeavoured to vault over it. At this moment his foot slipped, his axe flew out of his hand, and he fell from the rock on to some deep snow beneath it, down which he slipped on his back and nearly succeeded in stopping himself with his elbows. Unhappily the snow was frozen, and he fell on the rocks beneath. Realising his position, he turned round with a great effort and tried to grasp the rocks with his hands; but the velocity he had then attained was too great, and he fell from rock to rock until he disappeared from view. Mr. Craven and the guides returned to Zermatt at 7 P.M., having been on foot over twenty hours.

'The guides were of opinion that Mr. Moseley had fallen on to the rocks immediately above the Bergschrund of the Furggen Glacier; but bad weather frustrated all attempts to recover the body of the unfortunate gentleman until Sunday last, when Peter Knubel, Peter Gabriel, and Joseph Taugwald succeeded in finding it just where they expected to do so, about 2,000 feet below the spot where the accident occurred. The body was brought to Zermatt—I need hardly say in what con-

dition—on Sunday evening by the guides whose names I have mentioned, assisted by Mr. Craven, Mr. Vernon, and Mr. Seymour Hoare.

‘I desire to give you only a statement of the facts, and to make no comment upon them; but I was shocked to find, on examining the remains, that Mr. Moseley had hardly any nails in one of his boots, and all rock-climbers know how impossible it is to ensure steadiness under such conditions, and it is quite clear that if the rope had not unhappily been removed, I should not have had to trouble you with this letter.

‘No blame whatever attaches to Rubi, to Inäbnit, or to Mr. Craven, for whose position the keenest sympathy is felt; and it is hardly necessary to state that the kindly and considerate conduct of M. and Madame Seiler is not likely soon to be forgotten.

‘Mr. Moseley’s effects have been forwarded by the authorities to the American Consul at Geneva; and my colleagues and myself have taken the responsibility of burying what is left of our friend under the south wall of the English Church at Zermatt, by the side of Lewis and Patterson, and under the shadow of the great mountain which now numbers another gallant mountaineer and accomplished gentleman among its many victims.

‘Zermatt, Aug. 19.’

Of the second fatal accident to a traveller, we have received no authentic details. According to the best accounts, on August 18 a party of young Englishmen, with ladies, but without guides, left Ormond Dessus to cross the glacier between the Diablerets and Oldenhorn. In the descent one of the young men, a Mr. Forester, attempting to glissade, fell over a precipice and was killed. His corpse was recovered with great difficulty.

THE DEATH OF JOSEPH BRANTSCHEN ON THE MATTERHORN.

Within a few hours of Dr. Moseley’s fall a second death occurred on the Matterhorn under very peculiar and painful circumstances. A Swiss party, consisting of Herr Lüscher and Professor Schiess,* of Basel, with J. M. Lochmatter and Joseph Brantschen of St. Niklaus and Pierre Beytrison of Evolena as guides, reached, on the afternoon of August 12, from Breuil, the cabin on the Italian side of the Matterhorn. There Brantschen was taken ill during the night; there he was left alone while his companions crossed over the top of the mountain to Zermatt; and there he was found dead (by three guides sent to his succour) on the afternoon of the 14th, some thirty-six hours after he had been left.

Shortly after this event the ‘Times’ published a letter from ‘An Alpine Clubman,’ giving a most distressing account of the circumstances. This letter is too recent in our readers’ minds to need reprinting. All the explanation it requires will be found on a subsequent page. About

* Professor Schiess is a member of the medical profession, and, we believe, practises as an oculist. He read a paper on ‘Mountain Sickness’ to the Congress at Geneva ten days before his ascent of the Matterhorn.

the same time paragraphs and letters appeared in various Continental publications throwing more or less blame on Brantschen's companions.

In consequence of these reflections, the Basel Section of the Swiss Club, to which the travellers belong, requested them to furnish an explanation of what had occurred; and the statement, translated below, was, on September 12, read before it by Professor Schiess, on behalf of himself and Herr Lüscher.

'When, on August 10 last, we were on the look-out for a guide to lead us over the top of the Matterhorn from Breuil to Zermatt, an expedition which neither of our special guides had yet made, J. M. Lochmatter recommended to us Joseph Brantschen as a strong man. Our original intention had been to engage a capable man at Breuil, but our St. Niklaus guide preferred a Valaisan to an Italian. Brantschen was already known to one of us in previous years, but only as a second guide. We therefore, following the advice of young Herr Seiler, the manager of our hotel, first looked about us for another man. Unfortunately Zum Taugwald and Moser, whom he recommended us, were both already engaged. As Brantschen, in other respects, satisfied us, and there was no one else there, we engaged him, although he had only once before made the same expedition. That he was one of the leading Matterhorn guides, as some ill-informed newspaper writers have pretended, is entirely incorrect.

'On our way across the Théodule Pass to Breuil, Brantschen tried to persuade us to cross the peak in one day, instead of, according to our first plan, sleeping in the Breuil cabin. After some discussion, we adopted this suggestion. We started accordingly very early from our night quarters in the little hotel at Breuil. Brantschen led at first; afterwards, when the way was more difficult, Lochmatter. When we reached the "Cravatte," whence the top is first seen, it was already 1 P.M. Lochmatter told us we had still four hours' work to reach the top, and the question arose whether it would not be more prudent to spend the night in the Italian cabin, as we were afraid of arriving too late at the Zermatt Club-hut. We were without wood. Had we remained firm to our first plan, we should have taken a porter with more provisions and a proper supply of wood.

'We reached the cabin at 1.20 P.M. After we had looked about us for a time, we directed the guides to drag out and put in the sun the five sheepskins which were at hand. The temperature in the sun was 24 degrees R. Then we all lay down beside the hut, and each tried to go to sleep.

'The hut, built by the Italian Alpine Club, stands, according to Tschudi, 4,122 metres above the sea, some 70 metres higher than the top of Piz Bernina. The ascent from Breuil to the hut is more difficult than that from the hut to the top. The hut has a small door opening inwards and a small window. No furniture is provided, except a number of warm sheepskins and an india-rubber air mattress with three divisions, which, however, no longer holds the air. Tea and chocolate were made in an empty metal case by the aid of chips cut out of some few billets which we found there.

‘In the course of the afternoon we remarked that Brantschen was unwell; Lochmatter kept on pressing him to eat and drink. We took no great heed of the matter, and looked on it as mountain-sickness, or the result of drinking too much water during the ascent. On my asking Brantschen when he had first felt unwell, he answered, since he had slept in the sun. We observed no spitting of blood on his part during the ascent; had we noticed anything of the kind, we should naturally not have taken him with us. Up to 5 P.M. he was sitting on the doorstep, his gaze directed on Breuil. Later on, after he had lain down, he began to groan and throw himself about, in the night also to rattle in the throat (*röcheln*). Being asked where he felt pain, he answered, he felt pains all over (*es thue ihm überall Weh*). There was altogether not much to be got out of him either by us or by Lochmatter. He was, however, in no high state of fever, he was not hot to the touch, and his pulse was not unusually rapid. There was no remarkable coughing. My guide (who spoke nothing but French) acted as cook, and succeeded with the small stock of wood in making tea several times, and towards morning chocolate also. This tea was the only restorative we could offer to the sick man, and he seemed to take it gladly. Towards morning he at last became quieter, his breathing more regular, and he left off groaning and crying out (*er hörte auf zu stöhnen und zu jammern*). The guides and my travelling companion contrived to get some sleep. I had no rest, and saw the first grey of dawn. In the night the howling of a storm was several times heard.

‘When we began to stir in the morning, Brantschen was decidedly better, he was able to raise himself upright, and to answer questions. We ourselves saw nothing of blood-spitting or vomiting, nor did we hear either of the guides remark anything of the kind. This, therefore, is no more a true report than the heart-rending departure-scene of the “Times” correspondent; it is really marvellous how in this narrative—we will not inquire whether intentionally or not—what actually occurred has been distorted. The story of the “Times” correspondent, the responsibility for which he must entirely bear, appears to me as a compound of reporter’s zeal, misunderstanding, lively imagination, and disgust at the fact that two Swiss Clubists should have crossed the Matterhorn, which had not been crossed in 1878.*

‘To our astonishment we have also been sharply attacked from a side from which we assuredly were entitled to expect a colleague’s absence of prejudice and accurate taking into account of our circumstances, namely, by the President of the newly-founded “Alpen Klub Oesterreich,” Herr Meurer. This gentleman had, like us, intended to cross the Matterhorn from Breuil; his party was, however, stopped below the peak on the Italian side by bad weather.

‘It was a pleasure to us, on the other hand, to read in the “Journal de Genève” a completely accurate account from a correspondent entirely unknown to us.

‘On the morning of August 13 the guides had given a hope that Brantschen might recover sufficiently to accompany us; for this reason

* See post.

the start was delayed till 6 o'clock. But it became evident that this was impossible. And now no discussion took place, neither was there any interchange of plans between the guides and Brantschen.

'It appeared best to all of us to wrap up Brantschen well, to furnish him with the necessary provisions, and to hurry over quickly to Zermatt (*rasch zu Zermatt zu eilen*), and send him help. Had we remained with him it would have been of no benefit to Brantschen; and I am also convinced that he himself thought our course of action perfectly natural, otherwise he would have made some remonstrance, which he did not do. We bade him keep up his courage and wished him farewell, in the hope that he would by degrees entirely recover. Lochmatter further recommended him to place himself during the day in the sun outside the hut.

'Many have found themselves in a worse position than Brantschen's in the mountains. From all injury from weather he was protected by the hut and an abundant supply of sheepskins; he had sufficient provision, and the certain prospect of being succoured on the second day by his fellow villagers. Had a traveller—for instance, I, with my Evolena guide, remained there it would have been no help to Brantschen. The tea and wood were used up. Lochmatter alone, as his friend and neighbour, could have exercised an encouraging influence. We had no medicines. Had bad weather come on, our retreat to Breuil would have been cut off, and without being of any assistance to Brantschen, we should have put ourselves in the greatest danger.

'It was impossible for Lochmatter to remain, since he was the only man who could have gone with one of us to Breuil or Zermatt. To Herr Meurer's suggestion that we ought to have gone to Breuil, we reply that this would have been of little or no advantage. It was 6 A.M. before we started on the 13th, at least two hours must have been spent in the lonely inn at Breuil in organising the necessary relief party, it could not therefore have reached the cabin the same evening; even at the soonest it would not have been expected till the forenoon of the 14th. On the other hand, we knew that we should find in Zermatt friends of the sick man, as proved to be the case; and these came up in the first hours of the afternoon of the 14th.*

'It was in Zermatt that we first learnt that Brantschen was an unhealthy man; that two years previously, in an ascent of the Matterhorn, in which he had displayed great courage, he had contracted a lung disease, and had never been sound since. At that time he had been left behind in the Swiss Matterhorn hut.† Again, in the spring of 1879 he had had recourse to the doctor, and in the present season he had been left behind on account of bodily weakness. Of this we had heard nothing before or on the mountain, although Lochmatter was at any rate aware of the earlier Matterhorn affair. Of Monte Rosa he might maintain that he knew nothing, as he had but just returned from a three weeks' tour to Chamonix. When we spoke to Herr Seiler, the father, at Zermatt, he said at once he should have counselled us altogether against Brantschen.

* See post.

† See post.

'We had, therefore, without warning of any sort, undertaken a dangerous expedition—on which it was essential that each of us should be absolutely sure of the others—with a man actually bodily incapable for it (with which, however, we do not wish to reproach him). Consider the situation of a traveller with a porter and such a guide! Consider that he might have fallen ill not in the hut, but between it and the top, and bad weather might have come on in addition, in which case all three might have perished irretrievably. This side of the business has perhaps not been sufficiently considered; yet it seems to me a somewhat essential one for us Clubists.

'Were it possible in this sad affair to assign, according to human computation, to each his share of blame, some would certainly fall on the man who engaged himself for an undertaking for which he must have known beforehand he was, through no fault of his own, no longer fit. We bear Brantschen no ill-will, the poor man unhappily has had to suffer only too severely; he was exceedingly anxious to earn something for his family and naturally hoped for the best; but still it was not right entirely to conceal from us the past. Knowing nothing of it, we looked on Brantschen on the morning of the 13th as a man likely to recover. It is disloyal to judge us as if we had then known circumstances which now in consequence of what has happened are everywhere well known.

'At 1.30 A.M. on August 14 we reached Zermatt. We had sent from the Swiss hut a message before us, and at 3 o'clock the relief party started over the Furgge Glacier skirting the Matterhorn. It found Brantschen already dead and stiff; apparently a rupture of the heart or lungs had happened. When he died One only knows: when the stiffness of death comes on at such heights is written in His book.

'As Brantschen was a heavy man, the three guides could not attempt to bring the body down, and seeing another party coming up from Breuil, they returned, having dragged the body out of the hut and covered it with stones.

'From my communications with Herr Seiler, who in the whole matter has stood by us in the most amiable and thankworthy way, I learnt that without calling for the services of an unreasonably large body of men, it would be impossible to get the heavy body down to Breuil uninjured. The plan was therefore agreed on that a party which, about eight men strong, left on August 20 for the Italian cabin, and to which we on our descent from the Breithorn gave up our own guides, should let down the corpse on the Stockje side, where another party waited with sledges.

'Had Brantschen remained ill in the hut, there would have been no means of getting him down. He must have remained there with a companion until he had recovered sufficiently to descend himself. How difficult the ascent to the hut from Breuil is, is shown by the fact that two parties who subsequently started from Zermatt were unable on account of storms to reach the height of the hut.

'H. SCHIESS.
'C. LÜSCHER.'

There are, it is obvious, many points in this statement open to com-

ment, were detailed criticism opportune. But it seems only necessary now to call attention to two matters in which the writers have been misinformed.

Active guides would have found no difficulty in going from the hut to Breuil and returning in the day. On this point Mr. Whymper and the English climbers who know the mountain best are in agreement with Herr Meurer, who was on this side of the Matterhorn a few days before and can speak therefore as to its condition at the time. Some years ago an English climber started from Breuil, crossed the top, descended to the Hörnli, and regained Breuil by the Furgenjoch in the same day.

It is untrue that Brantschen was left alone in any cabin on the Matterhorn in 1877. In that year, while descending the mountain in company with Mr. J. H. Wainwright and François Devouassoud, he was taken ill, and, after the party had unroped, was left behind with another guide near the Hörnli for a few hours. Nor had his disease its origin in any courageous act. All his symptoms point to his illness at that time as well as his subsequent death having been caused by exposure to cold acting on a constitutional weakness.*

It is unfortunately impossible to supplement this statement by the depositions of the guides taken at the inquest. Up to the present time the Swiss Alpine Club has not been successful in obtaining copies of these documents. This, as Englishmen are painfully aware, is by no means the first time that the judicial authorities of Canton Valais have withheld information as to the proceedings of their tribunals in a case in which their publication was essential. Their conduct in this instance has been most unjust to the travellers concerned.

We must now place before our readers the following communications, which have been addressed to the Editor by Mr. Percy Thomas, the 'Alpine Clubman,' who wrote to the 'Times,' and by Mr. W. W. Richmond Powell:—

'19 Cornwall Gardens, S.W., October 11, 1879.

'Dear Sir,—The story, as I first told it in the "Times," under the signature "An Alpine Clubman," came to me through my guide, Joseph Imboden † of St. Nicolas, and it purported to be the exact account brought down by Lochmatter to St. Nicolas. Moser brought over the tale from Zermatt.

'The details given to me were so circumstantial that I could scarcely believe them to have been fabricated, especially as guides (and Lochmatter in particular) are not imaginative as a rule.

'Imboden himself was quite overcome when telling me the story, and it naturally made *me* feel rather warm on the subject.

'No one would be more sorry than myself to think an injustice had been done to the parties implicated; but although it is possible the details

* The *Newe Alpenpost* of Zürich (October 11) has published a letter giving an absurd and untrue account of what took place in 1877. Full opportunity to correct his correspondent has been placed at the disposal of the editor, and we should be glad to learn he had availed himself of it.

† The President of the St. Niklaus guides.

of the parting scene are an exaggeration, I do not think there can be two opinions with regard to leaving a sick man to the awful solitude of a mountain hut for 36 hours! I wrote to Imboden some days back for all the information he can get from Lochmatter, and I enclose his reply, by which you will see that, while varying some of the details, he adheres to the first account he gave me as substantially accurate. Lochmatter, I may mention, acted as my guide but a few days previous to the Brantschen affair.

‘Believe me, yours very truly,

‘PERCY W. THOMAS, A.C.

‘The Editor of the “Alpine Journal.”’

‘56 St. James’s Square, Notting Hill, W.,

‘October 7, 1879.

‘Dear Sir,—As the controversy respecting the fate of Brantschen on the Matterhorn, and the degree of culpability attaching to the two Basel gentlemen seems to be by no means extinct yet, I send you a few particulars which have come under my own immediate knowledge in the matter. I have withheld these from the daily papers, since the opinion I formed of the conduct of the two gentlemen is adverse to them; but it is desirable that there should be a clear understanding on the subject so far as the Alpine Clubs are concerned.

‘On August 13 I ascended the Matterhorn from the Swiss side, accompanied by a friend, and by the guides Peter Taugwalder and Abraham Imseng. We reached the summit at 10.30, and there found Professor Schiess and his companions, with whom, however, we then held no conversation, as they remained at the lower extremity of the summit ridge. After a very brief halt, we retraced our steps down the mountain; but our progress was exceptionally slow, owing to an accident to one of the party from a falling stone, and we did not regain the hut till 5 P.M. The others arrived about ten or fifteen minutes later, and we then learnt of their having left Brantschen in the Italian hut; but from what they told us of the matter, neither my friend nor myself gathered the faintest notion that he was in any way seriously ill. They merely spoke of him as having been unwell during the night, and complained loudly that by his “jauchzen und jammern” he had interfered much with their sleeping. We were naturally surprised at their having left him by himself, but they assured us that they had given him an ample supply of food, and altogether treated the case in so light a way that I, for one, never suspected that anything worse was the matter with him than perhaps a fit of indigestion. We all quitted the hut by 5.45, the other party preceding ours by a few minutes; and in consequence of our continued slow progress, we did not reach Zermatt until midnight was chiming; but the others were still slower, and did not return until about 1½ hr. later. On entering the village we met two men—one of whom I was afterwards informed was Brantschen’s brother—and Taugwalder immediately commenced in an excited way to tell them about the poor man who had been left in the hut, and who “might be dead by that time for all one knew.” I interfered, and remonstrated with him for exaggerating the case, but he replied that it

was far worse than I believed, and that Lochmatter (the Professor's guide) had told him that Brantschen had been delirious all the previous night and was seriously ill, although somewhat better when they left him.

'I should mention that Taugwalder never alluded once to this matter during the descent; but by the light of what has subsequently become known, I do not suppose that he exaggerated or misrepresented the facts as he received them from Lochmatter.

'If Herr Schiess and his party were really anxious to send the man succour as soon as possible, they missed, I believe, an opportunity which they might well have made use of; for shortly after leaving the Swiss hut we met an Englishman (a Mr. Gardner, *not* an A. C.) with two guides, who proposed passing the night there, and going to the summit next day. Had he been made aware of the circumstances he might very possibly have been able to make some arrangements to visit Brantschen, if only to see how the poor fellow was getting on. The anxiety to despatch speedy assistance the Swiss travellers subsequently profess to have felt was, certainly, at the time by no means apparent.

'Believe me, dear Sir, faithfully yours,

'W. W. RICHMOND POWELL, A.C.

'The Editor of the "Alpine Journal."'

It is greatly to be regretted that the depositions of the guides are not before us. In their absence, it is impossible to determine how far they were responsible for the course adopted. But in order to form an opinion on the conduct of the party as a whole, it is not necessary to go beyond the travellers' own statement. Professor Schiess has gone out of his way to impute ridiculous motives to an Alpine Clubman, and by so doing made it incumbent on Mr. Thomas and ourselves to publish the authority on which the letter in the 'Times' was based, and thus to show that the assertions of which he complains come not from English press-writers, but from his own countrymen, Brantschen's comrades. But since the guides' formal evidence is unattainable, we will not attach weight to any second-hand statements. We treat Professor Schiess and Herr Lüscher as we should if they were our own members. We accept frankly, now that they have published it, their account—in so far as it deals with circumstances within their own knowledge and experience.

On the facts of this account, unfortunately, but one judgment can be formed in the Alpine Club. In the face of the description given by Professor Schiess of Brantschen's condition during the night, his excuses are altogether inadequate. The adoption of a route by which the nearest succour was (at the pace of the party) $19\frac{1}{2}$ instead of 8 hours off, may have been simply a deplorable error of judgment; but the determination to leave the sick man alone at all showed unpardonable want of heart. It must ever be to us a matter of profound regret that any travellers or guides should, without the least pressure of necessity, have left a sick man without firewood in a hut 13,000 feet above the sea to over thirty hours of certain and absolute solitude. There can be no doubt that the desertion of Brantschen under such circumstances was a flagrant breach of the first tradition of all

honourable mountaineering—the tradition, by virtue of which every member of a party, guide or mountaineer, has been accustomed in danger or distress to count on the support of his comrades.

To have to express such a conclusion is most painful; but we should fail in our duty as the mouthpiece of the oldest body of mountaineers, if we spoke less plainly.

A subscription was started at Zermatt for the widow and large young family left by Brantschen. It was, we are informed, headed by his last employers with 48*l.* and the Basel Section of the Swiss Club with 40*l.* It has now turned 250*l.* Herr Seiler, who has most kindly interested himself in administering the funds, found Brantschen's debts exceeded by a third his effects. We quote his words:—

'Quant à la famille Brantschen, elle n'a d'autre ressource que les dons des bienfaiteurs; les enfants sont tous en bas âge et incapables de travailler; la mère est une bonne femme, pleine de courage; en administrant bien la somme qui se trouve en caisse, et avec le peu qui sera encore donné, la pauvre famille sera sauvée de l'indigence dans laquelle elle serait tombée sans le secours des bienfaiteurs.'

The liberality of the Swiss public and of the visitors to Zermatt seems to have met, or nearly so, the needs of the case; but a few more pounds, Herr Seiler writes, could be well applied in setting up the family. Those who are inclined to supply them can send their contributions directly, by Post Office order, to Herr Seiler, Brigue, Canton Valais, or to Mr. P. Thomas, 19 Cornwall Gardens, S.W.

ALPINE NOTES.

THE AIGUILLE DU DRU.—On Friday, August 29, the second ascent of the higher peak of this mountain was effected by Mr. J. Baumann and Mr. F. J. Cullinan, with the guides Emile Rey of Ccurmayeur and Joseph Moser of Täsch. The party having slept somewhat higher up than did Mr. Dent's party on the occasion of the first ascent, started at 4.15 A.M. on the morning of the 29th. They reached the summit at 9.45 A.M. and remained there until 10.20. The sleeping place was gained at 3.40 P.M., and after resting there for an hour the party returned to Chamonix, the Hôtel Couttet being reached at 8.30 P.M. The entire time occupied by the expedition from the sleeping place to the summit and thence down to Chamonix, was therefore sixteen hours and a quarter; Mr. Dent's estimate that it would be possible to ascend the mountain and return to Chamonix in from sixteen to eighteen hours being thus fully borne out. Both guides behaved admirably, but especial credit is due to Rey, who took the lead throughout the day, and who on this occasion, as well as on other occasions this season while with the same party, displayed all the qualities of a first-rate guide.

The number of the 'Alpine Journal' containing Mr. Dent's account of the first ascent was carried by the party, and was referred to several times and found very useful in more than one doubtful spot as indicating the right way up.

The Alpine Club ropes left by Mr. Dent's party were found in good preservation and quite trustworthy; but the ladder is a rickety old structure indeed, and, though still in its place, is very much weather-worn and is no longer safe.

On the top were found two wooden wedges, one of the burnt fuses, and the stoneman mentioned by Mr. Dent, but the 10*d.*-staff and the infant's petticoat were gone. In place of the latter, the present party tied the wedges together and fixed them on the stoneman, with a pocket-handkerchief attached as a flag; and they left in a tin a card with their names, and the remains of a very excellent plum-pudding, which they trust the next comer will find in good preservation.

The weather throughout the expedition was perfect.

THE DENT D'HÉRENS.—On September 8, Messrs. J. Baumann and F. J. Cullinan, with the guides Emile Rey of Courmayeur and Joseph Moser of Täsch, effected the ascent of this mountain by the arête leading straight to the summit from the top of the Tiefenmatten Joch.

The party left the Stockje at 3 A.M., reached the summit of the pass at 5 A.M., and the summit of the mountain at 8.40. They left the summit at 9 A.M.; and returning by the ordinary route, regained the Stockje at 12 o'clock noon.

The party find it hard to conceive the ascent by this arête had not been more often effected.* It is manifestly the true way up the mountain. The arête is not difficult, the rocks are fairly good and afford some interesting climbing; and the descent on the other side of the Tiefenmatten Joch with the subsequent tramp over snow-fields is avoided.

The progress of the party on this occasion was somewhat retarded on the arête by a violent southerly wind to which they were exposed; but the fact of their having effected the ascent in such weather is in itself a proof that the arête presents no very serious difficulties.

They strongly recommend this route to future climbers of this fine mountain.

THE DOLOMITES IN WINTER.—‘I have a few remarks to make on Mr. Moore's note on “A Winter Tour in the Dolomites.” I suppose that I may include myself among “the devotees of the district,” but I, for one, although I had also received the same assurances as Mr. Moore, cannot confirm the opinion that the scenery is much grander in winter than in summer. I attribute the inferiority to the preponderance of white, and complete absence of green. During the winter of 1871–72 I spent several days in the Ampezzo district, favoured by the most splendid weather. Although there had not been much fresh snow up to that time, yet I found it extremely difficult to make rapid progress as soon as I left the beaten track; but I experienced no difficulty as regards guides. Both Santo Siorpaes and Alessandro Lacedelli most readily fell in with my proposal to make on January 1 an attempt on the Cristallo. Even with the occasional use of snow-shoes, we took six hours to get from the Tre Croci to the Cristall Pass, as we sank hardly

* It appears that Mr. Giles Puller descended by it after his ascent of the mountain from Breuil. See ‘Alpine Journal,’ vol. iv. p. 294.

ever less than kneedeep, and often much deeper, into the powdery snow. On the top of the pass we encountered a most cutting N.E. wind, which brought the thermometer to some degrees below zero (Fahrenheit), and after $3\frac{1}{4}$ hours more we were obliged to beat a retreat, although progress had become considerably easier above the pass. As it was, I had one of my fingers frostbitten. With a less severe wind I have no doubt that it would have been quite practicable to get to the summit. The view, especially towards the Tauern range, was very fine; but, as I have already said, there was too much white and no green, all the woods looking quite black. The sunrise was most remarkable, showing quite new effects, and lasting much longer than in summer or autumn. On the whole, therefore, I can only join in Mr. Moore's recommendation to mountaineers, that they ought to visit the Dolomites occasionally in winter. In my opinion, the railway journey over the Brenner on a clear winter's day is alone worth the trouble of going out all the way from England.

M. HOLZMANN.'

THE MARITIME ALPS.—'Sir, in your interesting account of the mountains of this district in a recent number you do not mention Mont Agel (height, 1,149 metres), one of the highest mountains of the coast, whose summit may be reached from Turbia in about $1\frac{1}{2}$ hr., and from Monaco railway station in $2\frac{1}{2}$ hours.

'Its ascent from Mentone would, I think, take longer unless you drive part of the way to Turbia. The view from this mountain is more extensive than from Mont Chauve, and judging from your account, than from any other mountain near Mentone. On the W. it extended to the Iles d'Hyères, and on the E. to the Eastern Riviera. In April 1878 I saw Corsica from its summit just as you describe in your ascent of the Cheiron, although it was then invisible from the sea level.

'I began the ascent from Turbia by ascending to the Col (visible from that village) leading to the Val de Laguet. Thence, by keeping high up, so as to avoid precipices, it is easy to reach the top, although there is no regular path for this route.

H. S. WILLIAMS.'

THE FIRST ASCENT OF PIZ ROSEG.—The following letter from Dr. P. Güssfeldt refers to an incident which preceded the writer's African travels, and is, perhaps, scarcely remembered. We have, however, much pleasure in complying with Dr. Güssfeldt's strongly expressed desire to set himself right in the matter before the Members of our Club, by publishing his very frank and satisfactory note:—

'Berlin, June 13, 1879.

'Sir,—Though I have not the honour of your personal acquaintance, I hope I may ask your kind assistance in the following matter. In a Memoir published in the "Jahrbuch" of the Swiss Alpine Club (1869), I doubted the fact that any gentleman had accomplished the ascent of the highest peak of Piz Roseg before. I am very sorry that I was led into that error, and I want to explain how it happened, as I did thereby great injury to two well-known members of your Club.

'1. I did not then know that Mr. Horace Walker had published an account of his and Mr. Moore's ascent in the "Alpine Journal."

'2. I had been utterly misled by the statements of some guides who furnished me with such particulars as to the pretended failure of the

first ascent, that I could not but believe them. Only a short time ago Mr. Walker's paper fell into my hands, and having read it, I feel it my duty to offer my sincere apologies to Messrs. Moore and Walker; and to state that I do not doubt in the least that they were the first to reach the highest peak of the Piz Roseg, and that if I ever doubted it, it was from being unacquainted with Mr. H. Walker's article.

'Believe me, Sir, yours most respectfully, &c.,

'PAUL GÜSSFELDT.'

THE SIKHIM HIMALAYAS.—M. Moritz Déchy, who started last autumn with an Oberland guide to explore the Eastern Himalayas, has returned, having been prevented by illness from carrying out the more ambitious part of his programme. He travelled, however, through the W. parts of Independent Sikhim to the foot of Kinchinjunga, crossed into Nepal, and returned by mountain passes to Darjiling.

MOUNT ARGÆUS.—A short account of the ascent of this mountain, the highest in Asia Minor, has appeared in the 'Times.' In a future number Mr. Tozer promises to give further details.

THE ANDES.—Feiherr Max von Thielmann has just published in a sumptuous volume the result of his journeys in N. and S. America, which at this moment, when Mr. Whymper with two Valtournanche guides has just left England to carry on the exploration of the Andes, have a special interest for English mountaineers.

ALPINE MEETING IN WALES.—As announced in the February number of the 'Alpine Journal,' a meeting of members of the Alpine Club was held at Capel Curig on April 19, when 25 members and friends sat down to dinner. The President of the Club, Mr. C. E. Mathews, in the chair. On the previous evening 13 of the party met at Bangor, and on the morning of the 19th ascended Carnedd David from Bethesda by the cliffs of the ridge that connects the two Carnedds. The presence of large quantities of snow and ice gave a thoroughly Alpine character to the scene, and added much to the interest of the climb. Descending to the head of Llyn Ogwen, the party ascended Trifan from the road, and making their way over a shoulder of the Glydwr, struck the high road from Pen-y-gwryd, about 2 miles from Capel Curig. The next day the party ascended Snowdon by Crib Goch, and notwithstanding bad weather, another day's good climbing was obtained.

The Editor has to acknowledge the receipt of many Alpine publications. All reviews and notices are necessarily postponed to the next Number.

The frontispiece to this Number is one of the new illustrations to Mr. E. Whymper's forthcoming volume, 'The Ascent of the Matterhorn,' which will contain the portion of 'Scrambles in the Alps' relating to the mountain, with additional letterpress and woodcuts.

Errata.

- Page 258, l. 14, for *Romandie* read *Romanche*.
 „ 280, l. 6, transfer the * to after *Visp* in l. 3.
 „ 306, l. 5, 10, 15, for *Mugbi* read *Mughi*.

11

Rocen dell' Argentina



FRO
a Dresi.

THE
ALPINE JOURNAL.

FEBRUARY 1880.

THE MARITIME ALPS. By the EDITOR.

2. *The Seaward Valleys in Spring.*

ΕΡΜ. Ἴδὸν δὴ, ἐπάνειμι αἰθῆς· εὖ ἔχει πάντα δρῶ· ἀνάβαινε ἤδη καὶ σύ.

ΧΑΡ. Ὅρεξον, ὦ Ἑρμῆ, τὴν χεῖρα· οὐ γὰρ ἐπὶ μικρὰν με ταύτην τὴν μηχανὴν ἀναβιβάζεις.

ΕΡΜ. Εἴ γε καὶ ἰδεῖν ἐθέλεις, ὦ Χάρων, ἅπαντα· οὐκ ἐνὶ δὲ ἄμφω, καὶ ἀσφαλῆ καὶ φιλοθεάμονα εἶναι. Ἄλλ' ἔχου μου τῆς δεξιᾶς, καὶ φείδου μὴ κατὰ τοῦ ὀλισθηροῦ πατεῖν. Ἐδγε, ἀνελήλυθας καὶ σύ· καὶ ἐπεὶ περ δικόρυμβος ὁ Παρνασσός ἐστι, μίαν ἐκάτεροι ἄκραν ἐπιλαμβάνονοι καθεζόμεθα. Σὺ δέ μοι ἤδη ἐν κύκλῳ περιβλέπων ἐπισκόπει ἅπαντα.

ΧΑΡ. Ὅρῳ γῆν πολλήν, καὶ λίμνην τινὰ μεγάλην περιβρέουσαν, καὶ ὄρη, καὶ ποταμοὺς μείους τοῦ Κωκυτοῦ καὶ τοῦ Πυριφλεγέθοντος, καὶ ἀνθρώπους πάνυ σμικροῦς, καὶ τινὰς φωλεοὺς αὐτῶν.

ΕΡΜ. Πόλεις ἐκεῖναί εἰσιν, οὗς φωλεοὺς εἶναι νομίζεις.

LUCIAN.

DAY by day, in the clear winter sunshine, I had seen from the hills round Cannes the snowy chain. The sojourners by the sea give it a glance now and then, and know it all as the 'Col di Tenda.' But to penetrate into its recesses no more occurs to them than a visit to Chamonix did to English travellers at Geneva in the seventeenth century. Even if sound in lungs and limb, they have, however, some good excuse for their indifference. For it is not until mid-May, when the sun-fearing English have flown homewards, that spring reaches the Alpine valleys. It is one thing to go in search of 'the Alps in Winter,' when your home is in a wet fog; another, when you are basking on the warm shores of Provence. I at least had no sufficient enthusiasm.

But the months slipped past, and I was still at Cannes. A change had come over the spirit of the landscape; the brown hill terraces were brown no longer, but bright with young green corn, which gave a new tone to the olive groves. There was less delicate and strange colour in the atmosphere; but, in exchange, an infinite variety of blossom and verdure in every field and copse. An exquisite cloak of young leafage

had fallen across the plain of the Siagne; among the crags of the Estérel the heaths and cistuses were in full bloom; even between the stones of their pathways tall asphodels were springing up. April—the May of the North—had come upon us.

In the Pyrenees I had once reached in April a peak of 11,000 feet. There seemed every reason to hope that a visit to the snowy chain would be rewarded by equal success, and a glimpse of the well-loved lands and heights which lay beyond it, Italy and Monte Rosa. At any rate, an excursion to San Martino Lantosca would show me two of the principal valleys of the Maritime Alps—those of the Vésubia and Tinéa—and enable me, I hoped, to identify the three principal peaks seen from the coast.

The Vésubia joins the Var some fifteen miles from the sea. But no wheel-track penetrates its last gorge. The high road from Nice to San Martino Lantosca follows a narrow glen for some miles, until near the high village of Levenzo it crosses a shoulder of the hills, and finds a way down into the Vésubia valley. I preferred a path of my own finding which promised wider landscapes.*

Heavy rain had fallen for the previous twenty-four hours; but the morning of the 6th of April (1877) was cloudless. Land and sea swam in blue quivering sunshine. The country was in its fullest spring outburst. The rose-hedges were throwing out their thousands of pink and white many-petalled blossoms. The quaint fringed blooms of the mesembryanthemum—spots of pale yellow or deep pink, such as Mantegna scatters over his bowers—hung in festoons down the roadside walls. The last purple and scarlet anemones were making way for the first poppies and gladioluses among the growing wheat. Here and there a crumpled little brown leaf on the low dusty vine-roots showed that the warm sun was stirring their juices. The stiff crooked branches of the fig-trees, which had stood for four months bare and gaunt, were now each tipped by an emerald

* In this district the 'Alpine Guide' requires, even on the high roads, considerable correction to bring it up to date. For instance, the détour by Levenzo is enormous for a traveller going up the Tinéa valley. A direct carriage-road along the banks of the Var and Tinéa leads from the Var station to San Salvatore, and will be carried on to Isola. The new road now completed to San Martino Lantosca has altered all the distances in the Vésubia valley. See Murray's 'Switzerland and Piedmont, 1879,' and Joanne's 'Provence—Corse—Alpes Maritimes,' 1877.

bud; one or two of the topmost buds were already unfurling into broad leaves. Through the tangle of young growths and flowers the Mediterranean shone, a vast breadth of blue, varied with vivid rainbow hues where the Var, swollen by the recent rains, poured its earth-laden flood into the waves. Above the sea horizon the Corsican mountains rose out of the waters, which, by hiding their base, give the snowy crests a strange and ghostly beauty.

The road led through the orange and olive gardens of the Nice basin, and then climbed the western spurs of Mont Chauve. Along these it continued in a high terrace, from which the eye ranged over the backs of the hills to the Iles de Lérins and the Estérel. The most prominent feature in the wide and noble prospect was the rock of St. Jeannet, a huge red buttress of the range which stretches from the Var to the Siagne. The new road ended at Aspromonte, a cluster of houses packed together on a mountain spur, high out of all danger from plundering pirates or Saracens. From this point I trusted to find my way by some foot-track to Levenso.

Among the branching paths above the village, I stopped a peasant to ask the way. I expected some sort of answer in the Provençal dialect. To my delight, the reply came in good Italian. When I used a few words of the southern tongue, the man's face brightened, and he offered at once to turn back, and put me in the right path. Such an act of simple courtesy is taken as a matter of course among Italian hills. In southern France I had not met with one such all the winter long.

The Provençal peasant has a character of his own. He is very estimable, but far from amiable. He seemed to me above all things suspicious, argumentative, tenacious of his rights; hence by no means inclined to allow trespassers on his little domain. As every vineyard has its pathway, and there are no gates or stiles to distinguish public from private paths, this tenacity naturally has often a chance of exhibiting itself. Near Cannes one is not surprised that trespassers should become tiresome, particularly when they appropriate the sweet crop of the violet-beds. But I have frequently been turned back near remote country villages, where a foreigner is not seen once a year. I have had, while walking along the high road with a handful of wild anemones, to submit to a violent harangue on the invasion of the rights of market-women involved in my self-plucked nosegay. It does not add to the pleasantness of the Provençal that his dialect is unintelligible to strangers, and that he takes advantage of his separate speech to evade as far as possible—unless intelligence seems to his own

advantage, in which case he brightens up wonderfully—questions addressed to him in French.*

It would be, of course, most unfair to take the Provençal and the middle-class Parisian as specimens of French manners, and my experience of the provinces is hardly adequate to generalise upon with confidence. Yet I cannot help believing that it is the Italians who possess, as a *nation*, beyond all their neighbours, the secret of manners. French manners, good as they generally are, seem to me acquired; Italian, inbred: the one to be based on a calculation that, among neighbours, politeness pays in the long run; the other, the outcome of natural sympathy. It is perhaps a proof of this distinction, that the Frenchman is quick to ridicule the stranger within his gates, while, as an old author puts it, 'if the strangeness of the habit draws the Italian's eye to it, yet he will never draw in his mouth to laugh at it.' †

Let us return, however, to a subject less delicate than national character.

Beyond Aspromonte I followed a rough track, keeping close to the crest of the hills overlooking the Var, until a mile or two short of Levenso it fell into the high road from Nice. The village itself occupies a hill-top to the left of the saddle from

* My impressions are confirmed by the report of a French Academician, printed in Mons. Lenthéric's excellent book on 'La Provence Maritime,' pp. 363-4. The traveller, Mons. Millin, expresses himself far more vehemently than I have done, but he wrote in 1807.

† I am aware that I here put myself in opposition to high authority. Voltaire laid down a dictum, which Mr. Matthew Arnold, in his persuasive positive way, has lately endorsed, that 'the gift of the age of Louis Quatorze to the world was the spirit of society,' 'a high standard of social life and manners.'

Let us see what opinions our ancestors held on the subject before or about the time this revelation was being made at Versailles. Lassels, who took young men the grand tour about 1660, tells them to go to learn how to deport themselves of 'that nation which has civilised the whole world and taught men manhood,' adding, 'the Italians have spread abroad their manners over all Europe, which owes to them its civility as well as its religion.' Against the 'fantastical, giddy breeding of France' his pupils are expressly warned. In Pepys' 'Diary' we have a specimen of the breeding objected to in 'Little Pelham Humphreys, lately returned from France an absolute Monsieur full of form and confidence and vanity, and disparaging everything and everybody's skill but his own.'

These Englishmen of the seventeenth century evidently believed good manners a somewhat older invention than they have been held by Voltaire and Mr. Arnold.

which the road descends into the gorge of the Vésubia. From a neighbouring brow the eye looks down over a broad cultivated basin to Rocchetta di San Martino, perched fortress-like on a crag beside the Var. Beyond the river rises, in most picturesque confusion, a tumbled mass of woody conical hills, with villages planted high on their slopes or brows.

I spent the afternoon and night at a decent wayside inn, and in the first sharp freshness of the morning pursued my journey to the snows. A few hundred yards beyond the house the road crosses a saddle, and the Vésubia comes into sight flowing at the bottom of a bare brown gorge. The road turns sharply to the right and descends along artificial terraces cut in the face of a steep ruinous hill-side, deeply furrowed by water action. After heavy rains it must be exposed to dangerous earth-falls. The landscape was at first arid. Soon, however, a white village, embowered in olives, came into sight on the opposite hill. At the angle, where the road bent back into a deep recess and began to ascend, the scenery became most romantic. Cypresses mingled with the olives, and huge chestnuts spread their bare arms against the blue sky, while the ground between their roots was coloured by a quiet carpet of violets and primroses.

From this point the road winds upwards to the picturesquely scattered houses of Duranus. Behind them it passes along the face of a sheer precipice. A stone thrown from the parapet would fall into the Vésubia 1,200 feet below. This terrible cliff—one of the most abrupt on any Alpine road—is known as ‘Le Saut des Français.’ In the spring of 1800, before Marengo, the Austrian general Melas drove Suchet and the armies of the Republic in headlong rout from the passes of the Maritime Alps and across the Var. Coming over the hills from the Col di Tenda, the Austrians here fell upon a French detachment, and many of the defeated soldiery were driven over the precipice. Such is the account given by local tradition and embodied in the name. But the military authorities referred to by Alison supply no further details as to the combat.

Beyond ‘Le Saut des Français’ the road for some miles slowly descends to rejoin the river. The predominance of the olive still gives a southern character to the scenery, and the flora is rather Mediterranean than Alpine, though rocks tower boldly overhead, and a sharp snow-peak, or the rugged comb of Mont Clapier, alternately closes the valley. La Riviera, a group of houses with a church, comes in as a most effective addition to the landscape. Beyond it, road and river,

now close companions, force the passage of a narrow defile where the first tints of spring were showing on the branches, and the underwood was already green.

The form of the basin below Lantosca suggests an ancient lakebed. The barrier of rock which closes its upper end exhibits a very curious specimen of water action: the Vésubia has worn through it a deep narrow cleft, which has been enlarged artificially to enable the road also to profit by it. The old village of Lantosca lies on the top of the bluff commanding the upper valley. The inns are by the road side, and are mere taverns.

For the next four miles the valley is wide and open, and, although the snows of Mont Clapier are in sight, tame compared to the lower gorges. In summer the scenery is doubtless rich and smiling: now, the fruit-trees, forerunners of the spring, sprinkled their fair blossom upon the face of a landscape as bare and brown as that of Piero della Francesca's 'Nativity' in the National Gallery. A few olives still gave sober variety to the slopes, hardily maintaining their ground where pines would have been more in keeping with the rocks and snow.

Between Roccabigliera and San Martino di Lantosca, some six miles, the valley rises steeply, and is too narrow to admit of cultivation. The baths of Berthemont, a summer resort, lie some hundred feet above the road on the right, in the opening of a side glen. On the opposite sunless mountain side, a pine forest climbed up into the snow. Venanson, 'the hunters' meet,' is the name of the high-perched hamlet which looks down on the last bend of the valley.

Amongst gaunt chestnut trunks and brown meadows, sprinkled with thousands of pale stunted crocuses, and set in a frame of pine woods, dark against the winter snows, San Martino, the Courmayeur of the Maritime Alps, came suddenly into sight. The little town, a mass of richly coloured stone walls and roofs capped by two church towers, stands on a promontory between two brawling Alpine torrents. I call it *town*, for the first thing that strikes the traveller is, that San Martino was a walled place. Who were the enemies who forced every dweller in the Maritime Alps to live as in a fortress, like an Ossete chief, or a modern Syrian peasant on the confines of the desert? On the coast it is easy to picture the sudden descent of pirates, and the flight of the scared villagers to their hill-top. But what inducement can have led marauders to penetrate these mountain fastnesses? The Saracens, we are told, infested at one time all the Alpine passes, and made the journey to Rome a real 'Pilgrim's Progress,' so far as danger was concerned;

but any precise information as to the doings of the invaders in these mountains is difficult to find. It is true that the Maritime Alps were from early times the scene of desperate fighting, whenever the French attempted to penetrate into Italy. But a mountain hamlet can hardly have found it worth while to fortify itself against passing armies.

At San Martino, as in more famous towns, the ancient walls are giving way before modern needs. The place aspires to become a sort of 'succursale' to Nice as a summer resort. Half a dozen 'chalets' (in the Parisian, not the Swiss sense) spot the fields about the village. A public promenade is being constructed as a termination to the new road, which has at last reached the gates. There is a very fair inn and pension (*Hôtel des Alpes*), which throughout the summer months offers moderate comforts at fair prices. There is also a liliputian chapel, which, I was told, had been built by an Englishman for English service.

The highest peaks of the neighbouring range are not visible from the village, and the landscape makes no pretence to grandeur. But it is perfectly Alpine, and in summer the abundance of water, the pines, and fresh meadows must be very welcome to visitors from the sun-scorched coast.

The new road winds outside the old walls to a little piazza at the upper end of the village, one side of which is occupied by a townhall, and the other by the *Hôtel des Alpes*. The old High Street, a narrow lane impassable for carriages, stubbornly refuses to be modernised further than by the admission of an 'English pharmacy,' and a telegraph office.

The master of the hotel and his wife had just arrived, and although their house was not yet prepared for the season, they made me very comfortable. The local guide was soon found. Of course he pronounced all ascents impossible, owing to the amount of snow on the mountains. According to my habit in such cases, I refrained from argument, and contented myself with intimating my desire to test practically how high it was possible to go with safety. From the hills near Cannes a symmetrical pyramid appears to rise in the centre of the chain, answering in position to the *Cima di Mercantoura* of maps. When, however, I inquired about that summit by name, the local guide at once assured me that the *Cima di Mercantoura* of the country was an insignificant eminence near the *Col di Cerieja*, and that the view-point in the direction I spoke of was the *Cima della Rovina*. This summit it was agreed accordingly we should attempt.

A cloudless morning encouraged our start for the snows.

Half an hour above San Martino the valley bends abruptly to the east, and the Italian frontier is crossed. The boundary line is here most erratic; the heads of several glens on the Nice side of the chain having been retained by Italy, probably to protect the late King's chamois' preserves round Valdieri from poachers. A sudden ascent beside a pretty waterfall leads to some chalets.* Near these we left the track to the Col di Cerieja, and mounted a steep path which led into an upland basin, at the foot of a rugged granite crest, very conspicuous from the valley. Before we left the pines we had come to the snow; fortunately it was crisp and hard. Long slopes led up to a higher basin, where the only colour was in the lichen-tinted granite crags, which shone golden in the pure morning sunshine.

Our peak rose precipitously to the east of the gap at the head of the glen. We climbed snow slopes to the shoulder between it and the bold crest, which now showed as a continuation of its southern ridge. We followed this till it became precipitous, and then traversed the south-eastern face overlooking the head-waters of the Vésuvia. Had not the snow been in perfect order there might have been some risk of starting an avalanche. Probably, had I been alone, or with François Devouassoud, I should have stuck to the ridge, at the risk of some stiff rock climbing.

It is perhaps worth while to point out here, what has struck me more than once, that in mountaineering at unusual seasons a local guide's advice may often be disregarded with advantage. He has a natural tendency to follow the ordinary summer route, while a climber to whom all routes are equal chooses that which is safest under existing conditions, and thinks little of some extra difficulty. As a rule, only such mountains as can be ascended by their ridges are safe in spring; and, on the ridges and the summit itself, snow cornices must be avoided with the greatest vigilance.

Climbing steep slopes, here and there broken by rocks, we drew near at last to the ridge of the Alps, the white skyline which all through the winter had girded my horizon. Looking back, I saw all the familiar foregrounds below me: the low curving headland of Antibes, the mounds of the Estérels, the wide bay of Saint Tropez, the southern cape of France, the grey sea plain, over which the wind was driving white cloud-flocks. In front, a hard black rock rose in our faces.

As we scrambled upwards, an object of jewel-like bright-

* A chalet inn has been opened since my visit near this spot.

ness shone out over the rock and on the edge of the sky. In another moment a glittering line fringed the new horizon. There was no mistake as to the nature of those clearly defined indentures on the distant heaven. Monte Rosa was in advance, backed by all her court; the stately Dent Blanche draped in spotless white; the Matterhorn, black and rough. Then came a crowd of lesser peaks of Arolla; and, closing the procession, the royal bulk of the Grand Combin, with the Velan in waiting on him.

One more step and the wide sudden prospect was complete. At our feet lay the mountain hamlet of Entraques. A short space further, Cuneo, with its river and churches and bridges and railway train, was seen like a toy town; and beyond it, stretching away to the base of the Pennine Alps, the broad plains of Piedmont shone in the morning sunshine.

My guide was disposed to leave unclimbed the few feet between us and the top, but when he saw I meant to go on he made no difficulty. A steep but safe ridge led us to the wave of snow which formed the summit. In one sense the panorama was not altogether satisfactory. We were surrounded by half a dozen loftier summits. Towards the Cima del Gelas the view was clear. But to the north rose the bulky Rocca dell' Argentera, the loftiest of the Maritime Alps, with two satellites, the Cima di Nasta and Cima di Culatta, both exceeding us in height. These peaks all belong to a great northern spur. On the main chain where that spur joined it, and between us and the Passo di Cerieja, rose another peak, also surpassing us by a few feet, the Cima Balma dei Ghilié of the Piedmontese map.

These neighbouring and higher summits cut off Mont Blanc, Monte Viso, and a part of the range I particularly wished to see, that about the 'Rocca Malivern.' Inland France was a wild waste of snow. Mont Clapier and its neighbours showed as bold rocky teeth. The sea coast was visible for many miles, but Corsica was obscured by the mists which floated above the waters.

The descent was speedily accomplished, for the night's frost had done its work well, and wading was put off to the last hour. During our return the local guide told me various stories as to his ascents of Mont Clapier and the Cima del Gelas, and also of the Monte della Stella, by his account the only difficult climb in the neighbourhood. He had never been to the Laghi delle Meraviglie, and could give me no account of the inscribed rocks there to be seen. I have before me a pamphlet by Mr. Mogridge, who, with a German companion, visited the spot, and

copied many of the rude designs, locally known as the 'Mera-
viglie.' They are found at a height of 7,800 feet, on rocks
smoothed by glacier action, at the head of a glen which opens
into the Roya valley at San Dalmazzo di Tenda. Mr.
Moggridge mentions with more respect than it deserves an
absurd theory which attributes them to Hannibal's soldiers!
Among the designs are many drawings of horns of animals, of
rude stone implements and arrowheads; in one only of those
reproduced is there any attempt to copy the human form.*

There are two ways from San Martino to the Tinéa valley:
the shortest by Val di Blore; the longest, but in summer the
most interesting, by the Val de Molières. Fearing a heavy
snow-wade, I chose the former. A steep zigzag path among
rocks and box bushes climbs the hill directly opposite San Mar-
tino. From the top we had a good view of the glen leading
up to the Col di Finestre, now deep in snow in its upper portion.
The hospice is deserted, and the pass entirely closed from
December to May. The hillside south of the crest of our little
pass was covered with larches. The ground beneath them was still
white with snow, but on the branches yellow buds were already
swelling. As the morning sun streamed on them, the outline
of each tree shone as if tipped with ghostly flame.

From the pass there is no distant view, and high limestone
crags on the right shut out the main chain. Below, in the
centre of a bare basin, lies the hamlet of San Dalmazzo. On
nearer approach it is seen to have been once walled; at least,
the houses had been so disposed that their outer walls formed a
continuous rampart. An arched gateway protected each en-
trance. The church bears signs of high antiquity and has a
well-proportioned porch and campanile. There was originally a
crypt and a triple apse. The red colour of the slates used gives
a pleasant warm tone to the otherwise shapeless buildings.
The village, like many others in this part of the Alps, is badly

* Others have been more recently copied in a paper I have not
seen—'Bulletin de la Société des Sciences à Cannes,' vol. ii. pp.
72-87, 'Étude sur les Sculptures préhistoriques du Val d'Enfer, près
les Lacs des Merveilles, de M. E. Blanc, accompagnée d'une planche.'
M. Burnat, however, who has examined the drawings on the spot,
expresses serious doubts as to the claims of at any rate a large propor-
tion of them to any high antiquity. Some of them are 'unfit for
publication.' He himself found an idle shepherd in the act of adding
to these 'prehistoric remains.' Mons. Lenthéric, in his 'Provence
Maritime,' describes the neighbourhood of Nice as singularly rich in
prehistoric remains. He ascribes them to a Keltic race (probably the
barbarians inhabiting the last chains of the Alps mentioned by Strabo),
who were driven up into the mountains by Phœnician colonists.

supplied with water, depending on one spring, which is considered unwholesome by strangers, owing only, however, so far as I could make out, to its extreme coldness.

The path descends slowly to the villages of Val di Blore, which lie in a more sheltered and fertile situation. Chestnuts now appeared, and steep banks yellow with primroses led me down to a torrent. The direct track to the mouth of the glen is being turned into a carriage road. We followed a mule-path along the slopes in order to reach San Salvatore, which lies some miles above the junction of the torrent of Val di Blore and the Tinéa. The vines here were planted in trenches and protected from winter frost, a novelty to me in alpine agriculture. Presently we came to Rimplas, a hamlet perched on a steep-sided brow jutting out between the two valleys. The Tinéa flows at least 2,000 feet below in a deep gorge. Beyond it the hills rise steeply towards the broad-shouldered Mont Mounier; their lower spurs are worn away by water, and broken into deep glens and hollows. Some of the villages occupy the most extraordinary situations. A house on the opposite hill overhung a precipice of 1,200 feet. Any children who live there must be kept hobbled, or they could scarcely survive infancy. Another considerable hamlet, higher up in the hills, was glued like a swallows' nest against a rocky slope, which, seen from opposite, looked wall-like.

The nature of the hillsides makes the access to the lower valley difficult. In the precipitous clay slopes water-action has wrought, and is constantly enlarging, a deep bay. No nervous person would care to ride along the path which circles round it.

This spot had been some time before the scene of an absurd incident. A new préfet of Nice made up his mind to visit his subjects in the mountains. Finding that he was to pass their way, the municipality of Rimplas—if this is the title by which the fathers of the hamlet are properly designated—determined to do him every honour. They assembled at the entrance of the village, and, as the préfet's cavalcade drew near, greeted it with a 'feu de joie' from all the available fire-arms in the place. Unfortunately, the préfet was at the moment at the narrowest point of the path, where it is a mere groove on the face of a crumbling precipice. Unfortunately, also, the spirited mule he rode, not having taken part in the campaign of 1870, was unprepared for such an explosion. Its rider, therefore, suddenly found himself imitating, much against his will, the attitude of Napoleon crossing the Alps, as represented in the most authentic engravings. The préfet, feeling unequal to such rivalry, rapidly slipped off on the inside, and

made his entry on foot, to the dismay of the assembled villagers, whose hopes of governmental favour were thus suddenly brought down to zero.

Deeper and deeper we descended, till at last we were on a level with the tower of San Salvatore, a poor collection of drinking shops and hovels beside the muddy torrent, which is here hemmed in by steep hills. The gorge continues for eight miles more, then near Isola the valley widens out and becomes a broad bleak Alpine basin. Isola, however, is said to be picturesque, and it is at this point that a judicious explorer will enter the valley of the Tinéa from the north.

I had a long drive of 36 kilomètres to S. Martino del Var before me. My driver had been the conductor of the post-cart, and consequently had a large acquaintance along the road. Indeed he was the most socially disposed person I ever met with. His conversations with every passer-by began with a shout delivered 300 yards before we met, and ended in another sent back to a like distance after we had passed. Between times my ears would have been glad of some repose, but our animal called for incessant exhortations. It stopped not only at every public-house, but at corners whence paths turned off to a wine-shop in the distance. My driver plausibly explained that the horse had belonged for some time to the collector of 'contributions indirectes' and could not shake off the idea that he was out tax-gathering.

The scenery of the Tinéa on the whole disappointed me. From its depth and narrowness its channel might be expected to claim a high place among Alpine gorges. But owing to the extremely friable character of the soil the hillsides want character, and the vegetation, compared to the southern gorges of the Lombard Alps, is sparse. The defile, however, in which the Var and Tinéa meet is equal in savageness to the gorge of Göschenen, which it much resembles. At the junction the road from Puget-Théniers, a remote country town which obtained three years ago a passing prominence as the refuge of the Foreign Minister of France in his search for a seat, comes in on the right. For the next two or three miles the scenery is extremely romantic. On the right, a noble wood of stone-pines clothes the brow on which stands the hamlet of Bonson, and the road passes through groves of chestnut, which shelter the houses of La Ciaudan. A short distance further the Vésuvia issues from the mountains on the left, and the road to Roquesteron crosses the stony bed of the Var by a long bridge.

A little further the road reaches a modern suburb of S.

Martino del Var—untidy houses scattered round a village green. The old village still clings to its safe but inconvenient rock of refuge. I had intended to sleep here, and walk round next day by the hill road through St. Jeannet, a village formerly famous for its witches, but now only remarkable from the great red rock-castle, a buttress of the hills of Coursegoules, which towers above it, and is a landmark from Nice to Cannes. But the inn at S. Martino looked insufferably dirty, and the weather had broken. No vehicle could be obtained, but I had yet time to walk thirteen miles in the gloaming to the station of Le Var, where I could count on the late 'gamblers' train' to take me back to the luxuries of Cannes.

The road was flat and straight, the night soon fell, and with the darkness came heavy rain. When the endurance, however, is not too prolonged, and there is a certainty of comfort at the end, there is some pleasure in despising darkness and rain, and a bad heel. Despite all these hindrances, I finished my thirteen miles in very good time.

My half-hour of waiting at the dreary little station was enlivened by a 'screaming farce.' An old farmer of Vence played the leading character, ably supported by the whole strength of the P. L. and M. Company; that is to say, by the station-master and two porters. The farmer had gone to sleep and been carried past his station, and was now called on to pay his fare back to it, some six sous, before returning. In vain the Parisian station-master appealed to rules, showered illustrations—supposing one took a ticket from Paris to Fontainebleau and went on to Marseilles, could one expect to make the journey there and back for nothing? The old fellow triumphantly retorted: He had never been to, or come from, either place; and stamping his stick on the floor demanded confirmation from the bystanders in the broadest Provençal. The station-master prayed him at least to talk French. Temper was lost on both sides. The porters looked threatening, and a gendarme was spoken of. Suddenly there was a scream and a roar. While everyone was engaged with the old gentleman the train had arrived. The station-master lost his head, and called everything and everybody sacred; the porters flung open doors; the public rushed in a general 'sauve qui peut' into the utter darkness of the platform. We are off! Not yet; the train pulls up short, and the old fellow is bundled into the last carriage by the two porters. I saw him again on the platform at Antibes, having been a second time carried past his station; and I believe he may still be found travelling up and down the line, refusing to pay his fare, vexing the souls of 'Messieurs les

chefs de gare ;' and supplying to strangers a characteristic type of the southern farmer.

As the train slowly carried me homewards, I endeavoured to pass the time by turning over in my mind what I had seen during the previous days. I set myself to frame an independent opinion on a topic lately much discussed, the relative charm of the Alps in winter and summer.

I felt I had just added to my previous experiences fresh material for a judgment. For in early spring the high valleys are still wintry. But for a crowd of crocus blossoms scattered over the brown earth, and a golden tinge on the larch branches, I had observed no signs of returning life, and could easily have fancied myself in midwinter, as I had seen it before in other parts of the Alpine chain.

I do not despise the peculiar attractions of the wintry half of the year. Then the region of silent sublimity is extended so as to include the lower hills and passes. If the life of herds and flowers is gone, life in some of its less agreeable forms is also banished. The excursionist has disappeared, the horn-blower is silent. The muddy Swiss torrents are converted into clear trout streams; the supercilious, or truculent, Swiss landlord into an obsequious host. Wherever water trickles in summer, the frost fairies play their fantastic pranks. Every cascade is turned into a shining obelisk, every dripping crag is draped with bold ice fringes, even the branches of the pines and the bushes along the roadside are tricked out in strange liveries. Winter has other charms which painters best appreciate. The low sun and the morning mists give colour and tone to mountain slopes which in the glare and glitter of an unclouded August look harsh and dull. The blue sky keeps all day long a quivering mottled softness, as in a reflection. The pine-clad hollows are steeped in strange impalpable colours, and even the dullest crags succeed in having, to borrow the phrase of a distinguished critic, their gem-like moments. There is no longer the painful sense of a complete absence of atmosphere, dwarfing mighty mountains to mere rocks, which we have all of us felt from time to time in the Alps in summer.

But is all this compensation for the beauties that are lost? As usual, there is a good deal to be said on the other side.

The summer sun is a necessary test of true greatness. In winter every range of 6,000 or 8,000 feet apes the eternal snows. Mountains which carry their ermine through August we recognise as true sovereigns. But snow spread far and wide loses its divinity. It ceases to be mysterious, and becomes commonplace. In winter the foreground, wherever the

earth can still be seen, is made up chiefly of parched grass, bare branches, and dusky stumps. The pine-forest alone remains the same; and even this is changed, for the violent opposition of the dazzling snows turns it into a black shadow. In early summer the Alpine meadows, a few weeks before a patchwork of brown and white, like an immense drying ground, are covered ankle-deep in flowers—forget-me-nots, large daisies, purple orchids—which grow so thickly that the green blades of grass scarcely show between their blossoms. The glaciers look down through the budding branches of the chestnuts, or the brown unfolding leaves of the walnut on fields where the maize is already high, and the vine tendrils are leaping lightly from branch to branch. The snows no longer shine one white bank above another, but as a silver line over ranges chequered with blue and pink clouds of the great gentian and the Alpine rhododendron. The sense of fitness, which enjoys 'everything in its proper place,' and all things at their best, is satisfied. Even the everlasting snows are recognised as no abode of desolation. In the lowlands snow is at best a sheet drawn over nature's sleep. But in its summer home it is an agent of life. Mr. Tennyson, I venture to think, expressed a questionable, if a general, feeling when he linked Death with the Silver Horns. The really dead mountains are not the streaming Alps, but those of the farther South, which stand gaunt and parched, with no shining robe to hide their hollow ribs, no gifts to offer the valleys at their feet.

'The Alps in Winter' will always attract their summer friends by the force of novelty. Whether or not the attraction proves permanent will probably depend on the frame of mind in which they are approached. Optimistic theologians and students of natural history, who believe in the goodness of creation, or feel a simple delight in observing nature in activity, can hardly care to contemplate her for long when wrapped in a deathlike trance, however beautiful may be her winding-sheet. Kingsley, who united both characters, had this feeling so strongly that he did not appreciate snow-mountains at any time. On the other hand, all who feel deeply the darkness of the world admire and find sympathy in an aspect of nature which seems to reflect their own mood of stern and patient endurance.

For myself, I confess to having made another season my favourite. I am ready to maintain against all comers the claims of 'the Alps in October.' How many of us who think we know the Alps have seen the Italian valleys, or the Vale of Sallanches, in their full autumn splendour? If there is anyone

in the Alpine Club who has not been at the Riffel when every rock glitters with new-fallen snow, and the pastures exchange the crude green of midsummer for a rich harmonious brown hue,* when the larch trees are so many golden spires amongst the evergreen pines, and the bilberry bushes make a red carpet at their feet, when in the sharp chill of sunset every peak down to the little Riffelhorn creates a cloud phantom of itself which, after a hundred fantastic changes, melts away, as suddenly as it was born, into the starlit night—that man has yet to see Zermatt at its best.

From the fact that not a single Alpine Clubman was there on the 2nd of October, 1878, I am inclined to think that this hint may be worth giving; and I should be glad to persuade one or two to remain another year to enjoy the glories which nature seems to keep back till the last unworthy tourist has gone home to the pale damp skies of his native Germany or England.

3. *The Baths of Valdieri in Autumn.*

‘Ein reiner Schnee
Liegt auf der Höh’;
Doch eilen wir nach oben.’—GOETHE.

In fair weather the railroad journey from Turin to Cuneo, under the shadow of the great range, is one of the most delightful in Europe. The rich vineyards and campanili of the plain form a shifting foreground, while against the sky towers, solitary and sublime, the noble pyramid of Monte Viso, fulfilling beyond all other Alpine peaks our childhood’s ideal of a mountain. When the evening vapours gather and girdle its shoulders, leaving the majestic summit still clear, the most matter-of-fact mountaineer can hardly gaze without awe at so marvellous an apparition; and the idea of scaling such a pillar of the heavens may seem for a moment, even to him, a presumptuous dream. But, for the time, we must pass by without making our pilgrimage to San Chiaffredo, and allow our train, slowly drawing near the centre of the great bay in the hills which opens out before us, to carry us on to the station of Cuneo.

The town is placed on a low, steep-sided brow above the junction of two streams. Separated by five miles of level ground from the base of the Alps, its buildings gain no picturesque advantage from the accidents of the ground. There

* The ground colour of the finest Central Asian rugs. Is it not probable that it is there borrowed from the autumn hues of the great mountain pasturages over which the rug-makers wander?

is no upper town, as at Bergamo or Biella, to climb to for a wider view over the plain. A straight High-street runs from end to end of the town, lined with deep arcades resting on mediæval columns, some of which have finely carved capitals. It is connected on either side by short lanes with shady terraces, formerly ramparts, which command a wide outlook over Alp or Apennine.

It is the juxtaposition and contrast of these two famous ranges that gives its character to Cuneo. The mountains seen from the southern rampart are chestnut-clad, smooth-browed Apennines. Turn round, and true Alps are before us—Monte Viso pierces the sky; while behind it, distant but still imposing, shine the snowy masses of the Grand Paradis and Monte Rosa. The three peaks, bold tawny rocks, which look down the central street, are thoroughly Alpine. One of them is the highest of the Maritime Alps, the Rocca dell'Argentera; its companions are the Cima della Culatta and Cima della Nasta. The junction of the two ranges lies east of the Col di Tenda. Beyond it the hills soon become soft and southern.*

Apart from its mountains and its picturesque High-street, Cuneo is not remarkable, unless for the profusion of its markets. Nowhere have I seen a more magnificent display of fruit and vegetables, and the dinner set before me and my fellow-guests at the Barra di Ferro, an excellent inn, bore striking witness to the abundance of the land.

But in my outward journey in 1878 I saw nothing of the beauties of the Piedmontese plain, or of Cuneo. Driven out of Dauphiné by a snowstorm on September 25, I found Turin dark and chilly. The plain looked autumnal, damp and wretched. I seemed to have fallen under an evil dream. Italy, it appeared, had gone north. Chestnuts and campanili were involved in a grey pall of seething Scotch mist. The sky and landscape were utterly incongruous. Snow in May sometimes produces at home a contrast of the same nature, only less violent.

François Devouassoud and I arrived shivering under plaids at the village of Valdieri. We had intended to walk on to the Baths, some ten miles higher up the glen of the Gesso. But when we got to the junction of the roads, the weather looked

* M. Burnat, a Swiss botanist, who has systematically explored this region, fixes the E. limit of the Maritime Alps at the Col di S. Bernardo, considerably E. of the Col di Tenda. It seems to me that, from a simply orographical point of view, the natural boundary between the two ranges would be the lowest pass between the headwaters of the Roja and the Tanaro, a few miles E. of San Dalmazzo di Tenda. But the Col di S. Bernardo seems the deeper gap.

so hopeless that we hesitated to push on into the mountains to the deserted Baths. We were content to reach Entraques before the clouds burst on us. The inn, at the further end of the long straggling village, was most unpromising externally, but provided a clean bed and splendid trout.

The roar of many waterspouts had lulled me to sleep, and the same sound greeted my ears on awaking. About 7.30 A.M., however, the clouds suddenly broke, and in half an hour every vapour had passed from the sky, and the surrounding ranges stood out sheeted deeply in new snow, which touched the upper limit of the chestnut forests.

We determined to start at once to explore the neighbourhood of the Rocca dell' Argentera, to which, from our present position, the Val della Rovina formed the natural approach. This glen runs up to the main chain, and is parallel to that in which the baths are situated. The spur which separates them is in its whole length high and rugged, and culminates in the Rocca dell' Argentera.

Even on a cloudless morning Entraques did not impress us favourably. The basin in which it is situated is bare, and the mountains in view are without character. A rough cart-road brought us before long to the point where we had to leave the track of the Col di Finestre. Some men we met told us that the pass was closed by the fresh snow.

At the mouth of the Val della Rovina are some farmhouses in a grove of chestnuts. Above this we found nothing but a few rough shepherds' cabins. It is a continuous ascent of two hours through commonplace scenery to the lake. Royal paths are visible on the steep mountain sides on the left, leading to out-of-the-way spots, where the chamois could be most easily driven.

The Lago della Rovina is a charming mountain tarn, perhaps two-thirds of a mile long. Its transparent waters are hemmed in by wooded cliffs, and the valley beyond it is closed by a high barrier. The bottom is very deep and singularly smooth, except where a mass of boulders has fallen into it.

The ascent of the barrier is made by a good path, the commencement of a royal mule-road connecting the lake and the Baths of Valdieri. The rocks are clothed with ferns, and even the lateness of the season and my want of botanical knowledge could not conceal the uncommon richness of the flora, for which this neighbourhood is celebrated. From the top of the barrier we had to descend to rejoin the stream, which has made, or found, a lower gap in it. The rocks beside the path bore very marked traces of glacier polishing, particularly on the crest of the barrier. But this crest stretched across the glen with a

boldly undulating outline, and a great boss protruded where the ice might have been expected to plane down most heavily. I never saw a place which seemed to bear witness more strongly to the capacity for polishing, and the incapacity for removing serious obstacles, of glacier ice. The whole district appears singularly rich in remains of glacier action; although the present glaciers are very few and small. Mont Clapier alone bears any considerable amount of ice. The quantity of new snow made it impossible to say for certain whether any glacier still remained in the hollows of the range before us, beneath the Cima Balma dei Ghilié. The ice had certainly shrunk far back from the comparatively recent redans of rubbish which stretched across the mouth of each sheltered recess.

Behind the barrier we had climbed lay a lake basin, now drained; above this again another tarn. Deep tarns are characteristic of this granite chain. It is perhaps owing to my inadequate reading; but I have never seen it explained by the advocates of Sir J. Ramsay's theory of the excavation by ice of the beds of mountain lakes, why the work should have been carried out with so much more vigour where the rocks are, as in the case of granite, hardest!

We now had the watershed before us, with a possible direct pass over a rough gap east of my old friend the Cima della Rovina to San Martino Lantosca, a king's path leading left over a by-pass to the track of the Col di Finestre; and another path, right to the Baths of Valdieri. South of this was the portion of the range we were most interested in. Above a steep wall of rocks a long, but fairly gentle, slope rose to a ridge seeming to contain for some distance no prominent peak; after it had sunk slightly to a broad gap, it suddenly sprang up in a bold tower and pyramid. The pyramid, slightly lower and furthest from the gap, bore a big stone-man. The tower had none. This tower we settled, without much doubt, must be the Rocca dell' Argentera.*

Under ordinary circumstances we should, though it was past midday, have attacked it at once. But the enormous quantity of new snow deterred us, and we made up our minds to be content for the day with crossing the Passo della Lourousa to the Baths. The ascent was dull and laborious, and from the top there was little to be seen except the snows of Mont Clapier, with a singularly sharp rock-peak in their midst. On the way down there were fine views of the ridge to our left, which now

* It was the Cima della Nasta; the pyramid, the Cima della Culatta. The real Argentera lies too far back to be visible.

took the form of a double-pronged tooth seamed by a snow gully of singular steepness, and flanked by a huge rock castle.*

When we got out of the deep wet snow, which held us for an hour and a half on the crest, we were able to look about and recognise in the huge block opposite us the Rocca del Mat. It is a curious mountain, excessively precipitous, but too flat and formless about the top to be picturesque. A venturesome little king's path corkscrews to a certain height up its cliffs, and then stops suddenly, as if it had found its task more than it had bargained for. As in every descent, there is a sort of landing-place, with a chalet, before the final plunge. This is effected by a good cart-road constructed with the most exasperating skill, so as to retain a gentle gradient throughout. The hillside being for the most part too rough and steep for short cuts, we had to follow the zigzags of the road, and to walk several miles to reach a building we might almost have thrown a stone upon.

The Baths of Valdieri are one of the most famous and fashionable resorts of Piedmontese society. When Turin was a capital and Victor Emmanuel was young, it was here that king and court took their villeggiatura. Here, before he had discovered the superior capabilities of the Graians, was the royal sportsman's chief hunting-ground. Here his gallantry found abundant flowers with which to 'bunch' the beauties of his court. But in those days the king lived in his camp, and the bath-house was a comparatively humble affair. In 1857 a company took the place in hand, and built one of those huge barracks which satisfy modern Italian taste, which inherits from Rome a love of size for its own sake. Several so-called chalets—detached houses, something between a Swiss cottage and a suburban Turinese villa—have been built near it. The Rocca del Mat opposite is an imposing object, but the situation is too confined for beauty. The immediate environs, however, are pretty, as the deep gorge is clothed in fine beech-woods. The two glens which meet opposite the bath-house afford agreeable strolls. In the western glen, the Vallasco, is a large shooting box of the late king; and above it lie several clear tarns, the limit of the bathers' excursions. Another excuse for a stroll is a large boulder known as the Tomb of Merlin. It is connected in legend with a mysterious individual, a pseudo-Merlin, who is said to have retired from the court of Gian Galeazzo to this solitude.

* These two prongs are the Stella and Argentera (summit No. 1) of Mr. Coolidge. See p. 340.

As we came up to them the Baths looked dull and deserted. But we were little prepared to find how desolate they were.

François soon hunted out the 'custode' in an adjoining cottage. He was not in any sense a promising person. His manners were dull, and he could not do more for us than unlock a bed-room. The whole staff had fled; the cellar was locked; the cows had gone down to the valley; there was no bread, nothing but potatoes, and no butter to eat them with. After an interminable absence François returned with the potatoes and a rug to supply the want of bed-clothes. The latter unfortunately proved to contain a starved insect population. The custode's wife was reported worse than her husband, and unable even to boil water. It was hard to starve amid the symbols of plenty. The superscriptions 'cucina,' 'ristorazione,' 'caffè,' painted in capital letters over the doors of the corridor seemed to mock our hunger.

The next morning was as fine as the heart of a mountaineer could desire. We had determined to approach our peak by the Val dell'Argentera, a glen joining the Valletta a mile or two above the baths.

A royal hunting path led us up the first steep slope to a level platform. The range before us consisted of a rugged block on the north, with several jagged peaks separated by very steep snow gullies stretching south from it. One royal road led to the foot of the block on our left, another up to the right. Having in our minds the view obtained from the head of the Val della Rovina, and being also misled by the Piedmontese map, we believed one of the peaks to the right must be the Rocca dell'Argentera, and took the right-hand path. It would, I believe, have been at any ordinary time possible, though perhaps not easy, to climb the face of the block on our left. But, as we afterwards ascertained, these rocks were rendered wholly impracticable by the recent snow-fall, which had melted sufficiently to cover them with a glaze of ice. Those who had experience of London pavements last winter can imagine the dangers of stones in a similar condition laid at an angle of forty degrees and upwards. When the path ended we climbed on over steep broken boulders, amongst which weather-beaten pines struggled to a most unusual height, at least 8,000 feet. The golden lichen tints on the rocks overhead reminded me of those I had noticed a year before above San Martino.

When we got into the gully by which we proposed to gain the crest the work became severe. The snow was nowhere

good, and in places very steep and very soft. It was impossible to make any use of the glazed rocks on either side. We had to work on patiently, taking care not to send down an avalanche with ourselves on the top of it. At last we stepped up to the saddle, where an unwelcome surprise met us. We were only on the crest of a spur dividing two of the branches of the Valletta. Far away across the head of another deep hollow was our peak of yesterday. I made up my mind it could and must be reached, and then gave ten minutes to contemplation. There was one most delightful feature in the wild mountain view. A snowy dip of the main chain framed the bright blue sea. The pleasure and encouragement that glimpse gave us was immense.

We wanted some encouragement, for there was a bad two hours in front of us before we could hope to reach the saddle at the base of our peak. First, led by some considerate chamois, we scrambled down a gully. Then, at imminent risk to our limbs, we jumped about for some time on the points of boulders, all the interstices between which were filled up by new snow. Then we pounded up a long soft slope to a pass leading to the Val della Rovina. Here we had on our left a high shoulder, which hid what was behind it.

On our right rose the steep face of the Nasta. It is, no doubt, perfectly easy to climb when the rocks are bare. But the quantity of snow on them now was enormous. It choked all the convenient chimneys, and hid all the best handholds, so that one found oneself forced to climb along the projecting angles. We had gone but a short way when François pulled out the rope; and it was expedient. Going up pretty straight, not without some sharp scrambling, we reached in about an hour from the pass the summit, a narrow ridge beautifully mantled with piles of pure fresh snow.

Seated on its highest boulder, we feasted our eyes on a view of the most wonderful beauty. The main chain had altogether sunk, except where Mont Clapier on our left showed sharp rocks above broad snows. There was nothing to hide the beautiful coast-lands of France, from the double top of the Berceau above Mentone to—it was difficult to say what—westwards. Distance beyond distance, glowing in afternoon sunshine, and robed in the most delicate colours, stretched the familiar hills of Provence: Cheiron, Estérel, Montagnes des Maures. The Var shone in the lowlands; a pale smoke showed the train approaching Nice. Out at sea, the Corsican mountains hung midway between heaven and earth, no longer white with winter snows, but blue and purple, and canopied,

as at all times, by a luminous cloud suspended high above their crests.

The sudden change, from the fatigue and monotony of climbing and wading among rocks and snow to repose and this beautiful out-look over the land and sea, made the hour spent on the top a most ecstatic moment. Perhaps the fasting by which we had been prepared for it may have rendered the vision more intense, and its memory more vivid.

The gentle reader, however, need not be afraid lest my ecstasy should overflow into these pages. I have already, I fear, bitterly undeceived that too sanguine reviewer who recently thanked heaven that only one more great peak remained to be climbed; and, therefore, that only one more description of a view was possible. As if views only existed on great peaks, and were devoured by their first climbers! His patience shall not be tried any further; but he will, I think, hardly object to my quoting a few lines, which express with delicacy and grace the sources of part of the delight climbers feel on a mountain top; and may, coming from a standard author, have weight with those who think it bad taste to admire a panorama:—

‘Distant objects please, because, in the first place, they imply an idea of space and magnitude, and because, not being obtruded too close upon the eye, we clothe them with the indistinct and airy colours of fancy. In looking at the misty mountain-tops that bound the horizon, the mind is, as it were, conscious of all the conceivable objects and interests that lie between; we imagine all sorts of adventures in the interim; strain our hopes and wishes to reach the air-drawn circle, or to “descry new land, rivers, and mountains,” stretching far beyond it; our feelings, carried out of themselves, lose their grossness and their husk, are rarefied, expanded, melt into softness, and brighten into beauty, turning to ethereal mould, sky-tinctured. We drink the air before us, and borrow a more refined existence from objects that hover on the brink of nothing.’*

There was, however, one flaw in our happiness. A mile

* Hazlitt's *Essays*, ‘Why Distant Objects Please.’ Hazlitt, of course, is here speaking of distant views in general, not of mountain tops. Emerson, in his ‘*Monadnoc*,’ a poem frequently quoted by Professor Tyndall, but less known than it deserves to be to English mountain-lovers and haters, has expressed once for all the influence mountain-tops exercise on the minds of mountaineers—that is, on all right-feeling men. But, as Emerson adds—

’Tis the law of bush and stone,
Each can only take his own.

perhaps to the north a great rock rose several hundred feet above our heads. Hitherto it had been concealed by an intervening buttress. But there was no doubt that this was the true Argentera. We consoled ourselves with the reflection that our peak was maiden, and that the Argentera was said to have been more than once climbed.* But it cut off very provokingly the Pennine Alps east of Monte Rosa. Of the other parts of the chain, Dauphiné showed poorly, the Southern Graians finely.

As to our height, we appeared to be, perhaps, a few feet higher than the Rocca del Mat, but well above anything in the main chain nearer than the Cima di Gelas. And now we looked out eagerly for the mysterious western mountain of Cannes. Where it should have stood, at the head of the Vallasco, there was nothing but a cluster of third-rate rocks. No peak caught the eye but the majestic Monte Viso.

It was too soon time to descend. I confess with regret that we neglected to build a stone-man. If it pleases anyone in consequence to dispute our ascent, it may be done with impunity. It proved easy to clamber down the broken rocks on the southern face of the peak to the hollow between it and the Cima della Culatta, where a blue tarn lay dark among the new-fallen snow. This gave us another hour's tiresome work before we got down to the bare pasturages, where we found tracks leading down into the very head of the Valletta. Here are several groups of chalets, very unlike those of the northern Alps. The shepherd's cabin is a circular beehive-shaped hut roofed with turf. The sheep are penned in at night in a walled fold close at hand, and the principal employment of their custodians seems to be to collect and carry down manure.

We returned to the Baths in the gloaming, and, to obtain the food and rest which their inhospitable emptiness denied us, drove on at once to Valdieri village. We had not done all I had intended in the Maritime Alps, but I had satisfied myself as to the general character of their scenery. The upper glens are wild and stern, but seldom picturesque; the peaks are deficient in grandeur of outline, compared to those of equal height in the Eastern Alps. The views from them, however, are of surpassing beauty; and the valleys and gorges on the southern side are full of noble scenery. Perhaps starvation influenced our opinion of the Bagni di Valdieri, and the next climber who visits them will find the quarters more attractive. Let him remember that he will find there no

* See, however, Mr. Coullidge's notes, p. 340.

guides, but that fair ones may easily be procured from San Martino Lantosca.

Those who do not care for climbing I recommend to give a trial to the Certosa di Pesio, now a Pension, lying N. of the chain in the valley E. of that which leads to the Col di Tenda, and only some three hours' drive from Cuneo. San Dalmazzo di Tenda, S. of the pass, is also a well-known resort of the Nizzans.

TOPOGRAPHICAL NOTE.

The only authoritative Government survey of the central ridge of the portion of the Maritime Alps here described is at present the old Piedmontese map 1 : 50000, which is unfortunately full of errors. I can of course only point out such as fell under my own observation, trusting to the work of the Italian Staff, which is re-surveying the district in preparation for the new general map of Italy on a scale of 1 : 100000, the Valdieri sheet of which will probably be published in the course of the next year.

1. In the first place, the old map is responsible for raising, by the use of capital letters, to the rank of a summit of primary importance the Cima di Mercantoura. From it not only all general maps, but also the authors of the French Ordnance Map and of an official *Carte générale du Département des Alpes Maritimes*, 1865, have borrowed this name for one of the chief summits of the Maritime Alps. The height assigned to it in the Piedmontese map is 3,167 mètres, or 10,390 feet.

To Mr. Ball must be given the credit of having first discovered the false pretensions of the Cima di Mercantoura. He omitted it from the catalogue of the principal summits of the Maritime Alps both in the 'Alpine Guide' and the new 'Encyclopædia Britannica' (Article 'Alps'). But influenced, I suppose, by the little interest felt in England in this range, he confined himself to this negative form of correcting the common error. Map-makers at home and abroad (even his own map-maker, Mr. Weller) paid no attention to the hint, and the Cima di Mercantoura goes on to this day figuring as bravely as ever in the best atlases.

The first person on the Continent to call public attention to this strange error was M. Burnat in the 'Echo des Alpes' of 1878, in a note headed 'Une cime de moins dans les Alpes,' in which he pointed out positively the mistake made by cartographers.

Travellers, however, who have studied the chain from the sea may reasonably object that they have seen a conspicuous peak in the exact position assigned by maps to the Mercantoura. I can remove their difficulty. This peak, well shown in the frontispiece, is a compound mountain; it is made up by the Rocca dell' Argentera and other crests of the N. spur, towering over the comparatively tame summits of the main chain. Having seen the Chapel of St. Antoine, near Cannes, from the Cima della Nasta I can vouch for the spur overlooking the watershed, and *vice versa*.

2. The S. spur, ending in the crags of the Pelago, is rightly shown as abutting against the Cima della Rovina. But the great N. spur does not abut against the same peak, but considerably farther W. against the Cima Balma dei Ghilié of the map.

3. The heads of the Valletta and Val dell' Argentera are most incorrectly laid down, and the bold spur separating them is completely ignored. This spur of a spur projects from the S. shoulder of the Rocca dell' Argentera.

4. A considerable tarn between the Nasta and Culatta is ignored.

In the matter of nomenclature I have, subject to future reconsideration, followed generally that of the Piedmontese map. My Balma dei Ghilié, Nasta, Culatta will be found on it. But as regards the highest peaks of the chain I accept the names settled in consultation between Signor Isايا and Mr. Coolidge at Valdieri last summer. The peak to the N. of the great couloir which falls to the Col della Lourousa is to be the Monte della Stella. The triple-topped mass to the S. is the Rocca dell' Argentera.

The 'Alpine Guide' is in error in speaking of the Cima del Gelas (Gelas = glacier or snowbed) as a summit of Mont Clapier. They are as much distinct mountains as the Lyskamm and Monte Rosa. But the details of the topography of this part of the range I must leave to Mr. Coolidge.

Of the three peaks conspicuous from the coast I have now identified two: the E. is Mont Clapier; that in the centre, the so-called Mercantour, is really the Argentera. But as to the bold western summit, I have only proved that where it ought to exist, on the main chain at the head of the Valasco, there is no peak at all answering to it in form and prominence. Can it be Monte Viso seen over the comparatively low pass of the Col di Santa Anna (7,455 feet)? The supposition gained at first some apparent support from the fact (first pointed out to me by M. Burnat) that on one of the sheets (Var—Cap Roux) of the 'Carte Marine Officielle des Côtes de France, édition 1874,' is a panorama drawn from a point at sea 15 G. miles S. and 11° W. of the lighthouse of Antibes, in which Monte Viso is vaguely indicated on the horizon. I subsequently found on the next sheet (Cap de la Garoupe—Cap Martin) two more panoramas taken respectively from points 9 G. miles S. and 22° E. of the lighthouse of Antibes, and 8 G. miles S. and 21° E. of the lighthouse of Villafranca, in which the Maritime Alps are clearly but roughly drawn, and over them the words 'les Alpes, Monte Viso' are printed—in a vague way which gives no trace of any attempted identification of a single summit.

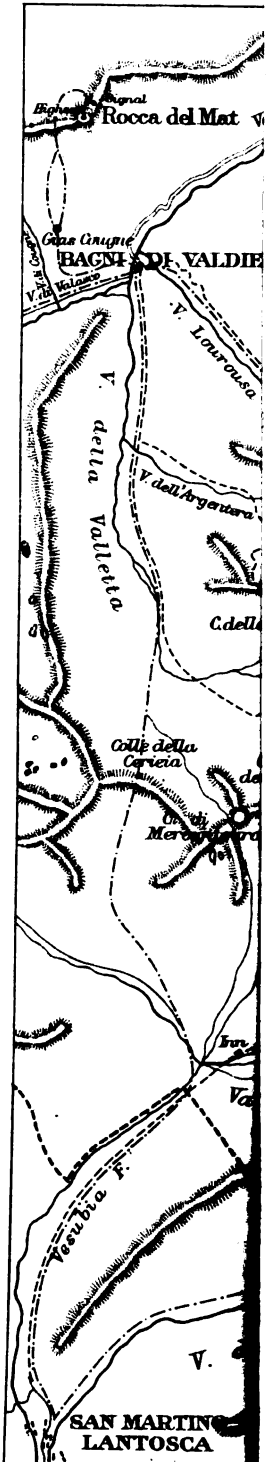
Whatever authority these indications might have had had however, been destroyed by Mr. Coles, the Map Curator of the Geographical Society. He has kindly worked out for me the figures, and after paying due attention to the curvature of the earth and the effect of refraction, it appears that, from any of the points from which the French panoramas are drawn, a chain of the height of the Col di Santa Anna (which is the lowest point in the main chain) would suffice completely to hide Monte Viso. It follows, *à fortiori*, that to a spectator at the sea level on the coast Monte Viso must be invisible. The western peak seen from the Iles de Lérins cannot, therefore, be Monte Viso.

TABLE OF HEIGHTS.

PEAKS.	Mètres.	E. feet.	Authority.
Rocca del Mat	3,087	10,128	P. M., I. S.
Monte della Stella	3,271	10,732	S. Isaia.
Rocca dell' Argentera	3,290	10,795	I. S.
Cima della Nasta	3,090	10,138	} Estimate based on comparison with peaks near at hand, D.W.F.
Cima della Culatta	3,080	10,103	
C. Balma dei Ghilié	2,999	9,840	P. M.
C. di Mercantoura	2,775	9,105	I. S.
C. della Rovina	2,985	9,794	Estimate, D. W. F.
C. del Gelas	3,135	10,287	I. S.
C. del Cairo Cabret	3,004	9,847	I. S.
Mont Clapier	3,046	9,994	P. M., I. S.
Colle della Cerieja	2,564	8,412	Ball, Joanne.
Passo di Finestre	2,471	8,108	I. S.
Bagni di Valdieri	1,349	4,426	Ball, Joanne.
San Martino Lantosca	961	3,153	F. S.

NOTE.

P. M. = Piedmontese Map, 1 : 50000.
 F. S. = French Survey, 1 : 80000.
 I. S. = Italian Survey, 1 : 100000



But my explorations have shown that there is no peak in the main chain of the Maritime Alps in this position capable of making such a show. The Tinibras lies too far to the W., and is besides not an isolated peak, but one of a group of nearly equal crags. The peak in question is, I believe, the Rocca del Mat seen, like the Rocca dell' Argentera, above the central ridge or watershed of the Maritime Alps. In the panorama here given it appears, it is true, somewhat too distant from the Argentera. But as bad weather prevented Mr. Croft from getting any one complete view, it is possible that the sketch is not absolutely exact in this respect.

The sketch map of the Valdieri district given here is reduced from the old Piedmontese map 1 : 50000, with such corrections as Mr. Coolidge's and my experience suggested. Through the courtesy of Signor G. Rimini I have been able to obtain from the officers of the Topographical Military Institute at Florence further rectifications and a valuable list of heights, although as the engineers have not yet personally explored the whole of the Argentera group, I have ventured in one or two details to differ from their present opinions.

It will be noticed that in the text, and the map as far as it goes, I have spelt local names within the new French frontier in the Italian form: San Martino Lantosca, not St. Martin Lantosque; Levenzo, not Levens. I have done so not from any political feeling, but on the principle that the limits of national speech, not the boundaries of States, should be regarded in this matter. If we talk of Levens we must also, to be consistent, talk in the Trentino of the Ledersee (Lago di Ledro) and the Judicarien. I prefer, however, Nice to Nizza because (as in the case of Trent) the town is too well known in England by the former name for any other to be used without affectation.

AN ASCENT OF THE MEIJE WITHOUT GUIDES. By CHARLES PILKINGTON. Read before the Alpine Club December 17, 1879.

THE summer before last, whilst Gardiner, my brother Lawrence, and myself were climbing the long arête of the Rateau, we looked carefully at the Meije, wondered at the grandeur of its southern precipices, and the impossible look of the mountain. The idea of climbing it occurred to us, and we then and there said that *we* should never think of attempting the ascent of a mountain like that.

A few days after, when leaving the district, we had a good view of the northern face, and one of the party pointed out a sort of couloir leading high into the mountain, which certainly looked more promising than anything we had seen on the south. Although we had no time to explore it, and knew that there was small chance for us where so many had failed, it enabled us, as a first step towards reaching the summit, to shake off

the feeling of awe with which we had hitherto regarded the mountain.

It was not, however, until the autumn of last year that we really thought of it. The paper read here in the winter decided us, and we determined that very night to try our luck on the southern side during the coming season.

We naturally kept our plans to ourselves as much as possible, but went on quietly with our preparations, one of the most important being the manufacture of an india-rubber bag six feet by five, closed at the neck with a string, like a large sponge bag. It only weighed three pounds, and in this we all three hoped to sleep on the Glacier Carré.

I will not further trouble you with our hopes and fears. The way up was discussed again and again, and it was finally arranged that the attempt should be made towards the end of our tour, and that we should try the Olan, the second peak in difficulty in the district, before going to the Meije.

On July 6 we arrived at St. Christophe in very doubtful weather, and after nine days' climbing tried the Pic Olan, and got up the central peak, the one first ascended by Mr. Pendlebury. Exceedingly bad weather coming on not only prevented our crossing to the northern peak first ascended by Mr. Coolidge, but made our descent very difficult by covering the rocks with powdery snow.

Our success in this expedition raised our hopes. We had ascended from the glacier to the top in three and a half hours' actual climbing, quicker than it had yet been done, except by a party of three local guides, who are said to have climbed it in less than three hours, having left their axes and rope below, and we had descended in a violent gale and thick mist, without once having to retrace our steps.

On the 19th we reached La Bérarde, where we found Mr. Coolidge with the two Almers. Coolidge knew that we had come to try the Meije, and he had very kindly given us all the information he could, not only about it, but about several other peaks and passes in the district. Almer also, after finding out our plans, was good enough not to laugh at us, and gave us one or two useful hints. He told us as well that the difficulty did not so much consist in finding the way as in getting up it.

At two o'clock in the afternoon of July 20 we left for our bivouac in the Vallon des Etançons, taking another man with us, besides our two porters, and at four reached the large square rock called the Hôtel Châtelieret, after the ancient name of the valley. We determined to sleep here instead of at

Coolidge's refuge a little higher up. The Meije was in full view, and we had our first good look at it since we had read the account of its ascent. There had been clouds about during the day, but towards evening they cleared off.

We went hopefully to bed, telling our porters to call us at eleven the same evening, so as to start at midnight; but long before that it was raining hard, and it required all the engineering skill of the party and the india-rubber bag to keep the water out. It cleared up at daybreak. Of course it was far too late to start then; besides that, we had agreed not to make the attempt unless we had every sign of fine weather.

As we had nothing else to do, we started at 8 A.M. on an exploring expedition, taking our spare ropes and some extra provisions, to leave, if possible, at M. Duhamel's cairn, some distance up the mountain, whilst our porters were to improve the refuge and lay in a stock of firewood. The snow was very soft and we were rather lazy, so it was not until eleven that we reached the upper part of the Brèche Glacier, and were opposite our work. The outline will, I hope, help to make what follows clear; it is from a sketch made at our bivouac.

A general description of the mountain is unnecessary, after Mr. Coolidge's careful paper in the February number of the 'Alpine Journal.' I will only remind those who may have forgotten, that the way lies up the great southern buttress, which forms the eastern boundary of the Brèche Glacier, merging into the general face of the mountain about one-third of the total height from the Glacier des Etançons, and 700 feet below and a little to the west of the Glacier Carré, from whence the final peak is climbed. The chief difficulty is the ascent from M. Duhamel's cairn on the top of the buttress to the Glacier Carré.

We had expected to get on to the buttress by the conspicuous snow couloir leading down from its crest near the cairn, and were much surprised to find it cut off at its base by impracticable rocks, so we made for a gap about 800 yards to the south near the end of the buttress, where some snow runs into the rocks. Here we halted to rearrange our burdens and look about us; starting again at 11.30, Gardiner leading. After a few steps up the snow, we gained the crest of the buttress by a short scramble. The crest is narrow but very easy, and we went rapidly along, until we came to where a great break in the arête divides the buttress into an upper and lower part; being no longer able to keep along the crest, we were forced to cross the rocks on our left to the couloir. Not quite liking the look of the snow, Gardiner asked us to hold tight

whilst he tried it. Finding it all right, he kicked steps up, and at five minutes past one we reached the cairn, having taken one hour and thirty-five minutes from the glacier. The great wall rose straight above us, but the way up, which we had had no difficulty in making out with the telescope from below, was no longer to be seen. Our spirits, which had been rising during our ascent from the glacier, sunk once more, and our former uncertainty came back upon us; for it is difficult to imagine anything more hopeless-looking than this face of the Meije. It has been said that, after finding all the most promising ways impossible, this seeming impossibility was tried as a last chance. We looked at it a long time, but at last gave up trying to make out the way as a bad job, determined to climb where we could, if we had luck enough to get so far another day; so, leaving our spare ropes, a bottle of wine, a loaf of bread, and a tin of curried fowl carefully covered with stones, we made the best of our way back, reaching the glacier in one hour and twenty minutes, and our bivouac in an hour and a half more. There we spent the next night and following day, but at last we had to give in to the bad weather and go sorrowfully down to La Béarde. It was very disappointing. We had been looking forward to the attempt for more than six months. I had to leave in a few days for England. It was not a mountain for two men to be on alone; what if we had spent all our time and trouble for nothing, and only carried our bed and provisions to the cairn for some one else to use.

On the evening of the 24th we were again at our bivouac; this time there was a cold north wind blowing, and the weather looked more settled than it had yet done since we came into the district. We watched the last glow of the setting sun fade on the crags of the Meije, and then crawled into our now well-known holes. At midnight exactly we were off, and, as we had much to carry, we took our porters with us as far as the bottom of the buttress, where we waited for daylight. At last the Tête du Replat opposite to us caught the reflection of the light, so, leaving a bottle of champagne for our return, as a reward of victory or consolation for defeat, we started at 3.15, unfortunately with an omen, for in bidding good-bye to our porters we said 'adieu' instead of 'au revoir,' and, although we altered the word at once, they left us with grave faces, old Lagier mournfully shaking his head. Gardiner took the lead again, and at 4.45 we once more stood beside the stone-man, finding our 'câche' of provisions all safe. Here we rearranged our luggage. Both the others took heavy loads:

Gardiner the knapsack, Lawrence the 200 feet of spare rope and our wine tin, holding three quarts; the sleeping bag only was given to me, as I was told off to lead.

We got under weigh at 5.15, and soon clambered up the remaining part of the buttress, and reached the bottom of the great wall, the Glacier Carré being about 700 feet above us, and some distance to our right. We knew that from here a level traverse had to be made until nearly under the glacier before it was possible to turn upwards. We had seen a ledge running in the right direction; crossing some steep rocks and climbing over a projecting knob (which served us a nasty trick on our descent), we let ourselves gently down on to the ledge, leaving a small piece of red rag to guide us in coming back. The ledge, although four or five feet broad, was not all that could be wished, for it was more than half covered with snow, which, as the ledge sloped outwards, was not to be trusted; the melting and refreezing of this had formed ice below, nearly covering the rest of the available space, forcing us to walk on the edge. We cut a step here and there. It improved as we went on, and when half-way across the face we were able to turn slightly upwards, and at 6.30 were near the spot where later in the day the icicles from the extreme western end of the Glacier Carré fall. It is not necessary to go right into the line of fire, and in coming back we kept even further away than on the ascent.

So far the way had been fairly easy to find, but now came the great question of the climb; how to get up the 600 feet of rock wall above us. To our right it rose in one sheer face, the icicles from the Glacier Carré fringing the top; to our left the rocks, though not so steep, were very smooth, and at the top, especially to the right, near the glacier, they again became precipitous. A little above us a broad ledge led away to the left, slanting upwards towards the lowest and most practicable part of the wall, obviously the way up. Climbing to this ledge, we followed it nearly half-way back across the face, then the holding-places got fewer and more filled with ice, the outward slope more and more until at last its insecure and slippery look warned us off it, and we turned up the steeper but rougher rocks on our right. In doing so I believe we forsook the route followed by all our predecessors, but we were obliged to do so by the glazed state of the rocks.

As the direction in which we were now going was taking us towards the glacier and the steep upper rocks, we soon turned again to our left to avoid them, the only way being up some smooth slabs, with very little hold, the sort of rocks

where one's waistcoat gives a great deal of holding power; worming ourselves up these, we reached a small shelf, where we were again in doubt. It was impossible to go straight up; to the left the rocks, though easier, only led to the higher part of the ledge we had forsaken; we spent some minutes examining this way, but again did not like the look of the glazed rocks; so we took the only alternative and went to the right. Keeping slightly upwards, we gained about 50 feet in actual height by difficult climbing. We were now getting on to the steep upper rocks near the glacier, which we had wanted to avoid.

This last piece of the wall will always remain in our minds as the most desperate piece of work we have ever done; the rocks so far had been firm, but now, although far too steep for loose stones to lodge on, were so shattered that we dare not trust them; at the same time we had to be very careful, lest in removing any we should bring others down upon us.

One place I shall never forget. Gardiner was below, on a small ledge, with no hand-hold to speak of, trying to look as if he could stand any pull, my brother on a knob a little higher up, to help me if necessary. I was able to pull myself about 8 feet higher, but the next rock was insecure, and the whole nearly perpendicular. A good many loose stones had been already pulled out; this one would not come. It is hard work tugging at a loose stone with one hand, the other in a crack, and only one foot finding anything to rest on. I looked down, told them how it was, and then came down to rest.

For about a minute nothing was said; all our faces turned towards the Glacier Carré, now only about 60 feet above us. We all felt it would have been hard indeed to turn back, yet it was not a pleasant place, and we could not see what was again above. We were on what may fairly be called a precipice. In removing the loose stones, the slightest back-handed jerk, just enough to miss the heads of the men behind, sent them clear into the air; they never touched anything for a long time after leaving the hand, and disappeared with a disagreeable hum on to the Glacier des Etançons, 1,800 feet below. We looked and tried on both sides, but it was useless, so we went at it again. After the fourth or fifth attempt I managed to get up about 10 feet, to where there was some sort of hold; then my brother followed, giving me rope enough to get to a firm rock, where I remained till joined by the others. It was almost as bad above, but we crawled carefully up; one place actually over-hung—fortunately there was plenty of hold, and we swung ourselves up it. From this point the rocks became rather easier, and at 9.30 we reached

a small sloping shelf of rock, about 20 yards to the west of the Glacier Carré and on the top of the great rock wall. Stopping here for a short time to get cool, and to let one of our party down to get the axes, which had been tied to a rope and had caught in a crevice in the rock, we changed leaders, and crossing some shelving rocks, climbed up a gully, or cleft, filled with icicles, and reached the platform of rock at the south-western end of the Glacier Carré at 10.15 A.M.

I have tried to be exact in this description of the top of the wall, for I cannot make it agree with Mr. Coolidge's. I feel sure we climbed the rocks in different places, and I believe he is of the same opinion.* His party, although they found it the worst part of the mountain, not only did not leave their spare rope, but brought down one of M. de Castelnaud's. Now I think that even Almer, having a spare rope with him for the purpose, would not have cared to descend that last 60 feet without fixing it to help him down. It was the only place where one was really necessary to us, and there was no part of the climb to compare with it. Some idea of its difficulty may be gathered from the fact that, out of the 4½ hrs. taken from the cairn, 2½ hrs. had been spent climbing the last 100 feet.

Again, Coolidge climbed so far to the west that he says, 'We were now on the spot whence a few steps over screes would have led us to the crest of the main western arête, whence La Grave can be seen'—that is, the crest to the west of Le Doigt, a secondary peak forming the north-western boundary of the Glacier Carré. We were never so much to the west as that, and on reaching the top of the wall were almost facing the centre of Le Doigt, and were never anywhere near the arête.

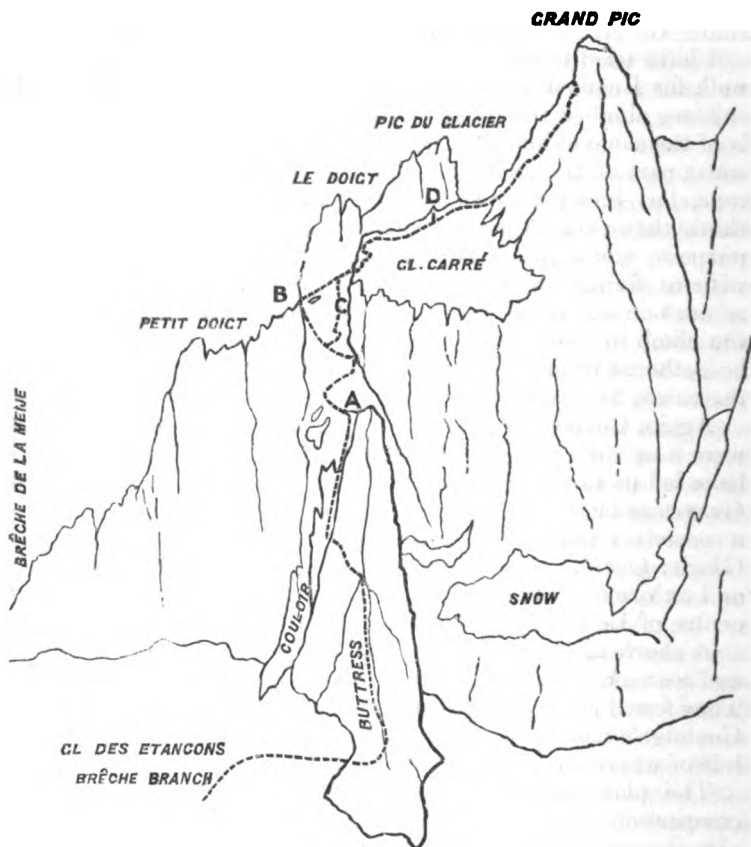
A short time since I read the account of MM. Guillemain and Salvador's expedition, which confirms me in this opinion. They found M. de Castelnaud's lower rope, and a bottle with Mr. Coolidge's name in it, near the top of the wall, far away to the left of where we climbed.

The platform we had reached can only be called one by comparison; it is rather smooth, and slopes too much to form a safe sleeping-place, but we left our extra luggage there, thinking it was the place where MM. Guillemain and Salvador spent the night after their ascent, although we could see no traces of the protecting wall they built, or stones of which to build one.

At 11.10 we started up the glacier, Gardiner going ahead, kicking steps into the steep soft snow.

* Mr. Coolidge agrees with me, and pointed out his route. (See sketch on next page.)

We were much more cheerful now than we had been two hours before. My companions had got rid of their heavy loads, the day was still very fine, and Almer had told us that, could we but reach the glacier, we should have a good chance of success. Skirting along the higher side of the snow, the col between the final peak and the Pic du Glacier was reached at



THE MEIJE FROM THE CHÂTELERET.

- | | | | |
|---|-----------------------------------|---|-------------------------------------|
| A | M. Duhamel's cairn. | C | Our route and 60 feet of rope left. |
| B | Mr. Coolidge's route up the wall. | D | Sleeping-place; bag left on rocks. |

11.55. There we stopped a few minutes to have our first look over the ridge towards Mont Blanc, and then started, climbing the rocks close to the main arête of the peak, getting more on to the south-western face as we got higher. There is no particular difficulty; at the same time it is nowhere very easy, and

there was ice in the shady corners, which delayed us a little, but we made height rapidly, and shortly after 1 P.M. were underneath the well-known overhanging top, the rocks of which, cutting across the face, form a triangular corner. It is the spot where Gaspard lost so much time looking for the way on the first ascent. We knew that the arête had here to be crossed, and the northern face on the other side taken to; we knew also that Coolidge had gained the crest of the arête by a very difficult icy gully, and it was for the descent of this that we had brought our second spare rope.

There were two gaps in the arête and a gully coming down from each. Not knowing which was the right one, we chose that nearest the top.* Climbing well into the triangular corner, over steep ice and snow, which was so insecure near the top as to oblige us to cut steps right through to the rock underneath, we turned sharply to our left, crossed the smooth rocks to the foot of the gully by a long convenient crack, only an inch wide in some places, and, much to our surprise, scrambled up the gully without difficulty.

Almost before I got my head over the crest came the anxious question from below, 'Will it go on the other side?' I could not see, however; so when the others came up Gardiner fixed himself and let us down to the full extent of the rope. The whole northern face, as far as we could see, looked terribly icy; but as there was no other way of regaining the arête higher up without going on to it, we told him to come down after us.

Turning to the right as soon as possible, we had to traverse the steep smooth face for a short distance. It took a long time, for the rocks were even worse than they had appeared; we often had to clear them of ice for a yard before we could find any hold at all, and sometimes only the left hand could be spared for cutting. After about fifty yards of this work we were able to turn upwards, and with great difficulty wriggled up the slippery rocks leading to the arête; rather disgusted, after climbing the gully so easily, to find the northern face so difficult—owing, perhaps, to the lateness of the season.

It was our last difficulty, for the arête, though narrow, gives good hand and foot hold, and we pressed eagerly onwards. In a few minutes it became more level, and there, sure enough, were the three stone-men, only separated from us by some easy rocks and snow, which we went at with a rush, and at 2.25 we stood on the highest point of the Meije.

The top is a ridge about fifty yards long, running north-east

* Mr. Coolidge's party crossed by the other gap.

and south-west, with a cairn at either end and one in the middle. The south-western end is cut steeply away, and forms the peculiar overhanging top, looking down on to the Glacier Carré. The north-eastern end joins the main arête of the mountain, the cairn being built near the junction, crowning the ridge leading down to the first depression between it and the central peak. The northern face of the summit ridge, after sloping down to the western arête, with which it forms a V-shaped hollow, falls steeply down in ice-covered rocks and precipices towards La Grave, whilst on the south a short snow-slope, probably not always there, leads to the top of the great southern precipices.

Knowing that it would be useless for us to try and descend farther than the Glacier Carré that day, and as it was pleasanter on the top than there, we went in for a long halt. Untying the rope—for the top is broad enough to be safe—we examined the central cairn, where the tokens are kept. We found a tin box, containing the names of all our predecessors; a bottle, hanging by a string, the property of Mr. Coolidge; a tricoloured flag; and a scented pocket-handkerchief belonging to M. Guillemin, still retaining its former fragrance, which it had not 'wasted on the desert air.' We tore a corner off each, leaving a red and yellow rag in exchange; put our names in the tin, and an English penny with a hole bored through it, which my brother hopes to have returned to him by the next climber.

Then, after repairing the rather dilapidated southern cairn, we sat down to smoke and enjoy the view, which the fact of the mountain standing on the outside of the group, the tremendous depth to which the eye plunges on each side, the expansive panorama of the Dauphiné and neighbouring Alps, and the beautiful distant view of the Pennine chain from Mont Blanc to Monte Rosa, combine to make one of the finest in the Alps.

At four o'clock, after an hour and a half on the top, we started downwards, soon arriving at the spot where it was necessary to leave the arête; however, before doing so we went along it to where it was cut off, to see if we could let ourselves straight down into the gap, and so avoid the detour by the northern face, but it was impracticable; so, putting the middle of the spare rope round a projecting rock on the arête, we let ourselves down to where we had gone along on the level, pulling the rope down after us; then regaining the gap by the morning's route, we crossed it, and leisurely descended the south-western face to the Glacier Carré, filling our now empty wine tin with water on the way down. We reached the glacier at 6.30, and stopped a short time on the col, admiring a wonderfully wild cop-

per-coloured sunset, looking at 'the green hills far away' near La Grave, and wishing ourselves there. But it was getting late, so we hurried down. In skirting the base of the Pic du Glacier we found a nice hollow in the snow, which looked a good place to sleep in. Gardiner wanted one of us to stop and build a snow wall, whilst the others fetched the bag and provisions from the bottom of the glacier. Lawrence was neutral; I was rather against it, having slept on snow before. At last we all went down to the rocky platform where our luggage had been left. We cleared a place for the bag, but it all sloped so much, and the edge of the precipice was so near, that we dared not lie down. We looked for a good rock to tie ourselves to; even that could not be found. I suggested crossing the rocks above where we had climbed in the morning, to try and find the screes spoken of by Mr. Coolidge, but it was voted against. Then some one thought we might scrape a hole in the steep snow above us, and get into it. That of course was quite out of the question. Nothing therefore remained for us but Gardiner's hollow above—the only level place we had seen above M. Duhamel's cairn large enough for us to lay our bag on. There was no time to be lost; it was getting dark; a sharp frost had already set in: so we at once shouldered our traps and trudged wearily up the glacier once more, wishing now that we had left some one to build a wall.

On reaching the hollow we put the ropes, axes, hats, and knapsack on the snow as a sort of carpet, placed the bag on the top, then pulling off our boots for pillows and putting on the comfortable woollen helmets given to us by Mrs. Hartley, got into the bag to have our supper. Fortunately there was not much wind; but it was rather difficult to open the meat tin. We did as well as we could, however, and after supper tried to smoke; but the cold air got into the bag and made that a failure; so we looked at the scene instead.

The moon was half full, and shone upon us as we lay, making everything look very beautiful. We could see the snow just in front of us, and then, far away through the frosty air, all the mountains on the other side of the Vallon des Étançons, with the silver-grey peak of the Ecrins behind, its icy ridges standing out sharply against the clear sky; and deep down in the dark valley below was the signal fire of our porters. As this could only be seen by sitting bolt upright, we got tired of looking at it, and the last link connecting us with the lower world being broken, we felt our utter loneliness.

The moon soon going behind a rocky spur of the Pic du Glacier, we lay down and tried to get warm by pulling the

string round the neck of the bag as tight as possible and breathing inside; but somehow the outside air got in also. So closing it as well as we could, with only our heads out, we went to sleep, but not for long. The side on which we lay soon got chilled. Now, as the bag was narrow, we all had to face one way on account of our knees; so the one who happened to be soonest chilled through would give the word, and we all turned together. I suppose we must have changed sides every half-hour through the long night. We got some sleep, however, and felt all right when the first glimmering of dawn came over the mountains on our left. As soon as we could see we had breakfast; but the curried fowl was frozen, and the bread could only be cut with difficulty, as a shivering seized one every minute. We had the greatest trouble too in getting our boots on. They were pressed out of shape, and, in spite of having been under our heads, were hard frozen. At last by burning paper inside, and using them as a lantern for our candle, we thawed them enough to get them on, and then spent a quarter of an hour stamping about to thaw ourselves. We rolled the bag up and tied it fast to a projecting rock, hanging the meat tin near it as a guide to anyone looking for it. It is to be found on a tongue of rock jutting into the Glacier Carré, about the centre of the Pic du Glacier.

At 4.30 we set off, very thankful that we had a fine day before us. We soon went down the glacier, and down and across to the shelf of rock where the real descent of the wall was to begin. A few feet below was a jagged tooth of rock which we could not move; so to it we tied one end of the 100 feet of rope, taking care to protect the rope where it pressed on the sharp edges with pieces of an old handkerchief; the other end we threw over the edge, and by leaning over we could just see the tail of it on some rocks below the bad part; so we knew it was long enough.

After a short discussion we arranged to go down one at a time, as there were places where we expected to throw all our weight on the rope. Gardiner was to go first, as he was the heaviest; my brother next, carrying all the traps and the three axes, as he had the strongest pair of hands and arms in the party; whilst I, as lightest, was to bring down the rear. So tying the climbing-rope round his waist as an extra help, Gardiner started, whilst we paid it out. He soon disappeared, but we knew how he was getting on, and when he was in the worst places, by the 'Lower,' 'A little lower,' 'Hold,' 'Hold hard,' which came up from below, getting fainter as he got lower. Fifty feet of the rope passed through our hands before he

stopped going. 'Can you hold there?' we asked. 'No. Hold me while I rest a little, and then give me ten feet more if you can.' So after a while we got notice to lower, and down he went again until nearly all our rope was gone; then it slackened. He told us he was fast, and that we could pull up the rope.

Then Lawrence shouldered his burdens, the three axes being tied below him with a short piece of rope. The same thing happened again, only it was more exciting, for every now and then the axes caught and loosened with a jerk, which I felt on the rope I was paying out, although it was tied to him. At first I thought it was a slip, but soon got used to it. Lawrence did not go so far as Gardiner, but stopped to help me at the bottom of the worst piece.

It was now my turn. Tying the other end of the loose rope round me, I crawled cautiously down to where the tight rope was fixed. The others told me afterwards they did not like it. I certainly did not. The upper part was all right; but lower down the rocks were so steep that if I put much weight on the rope it pulled me off them, and gave a tendency to swing over towards the Glacier Carré, which, as only one hand was left for climbing with, was rather difficult to resist. I remember very well sitting on a projecting rock, with nothing below it but air for at least 100 feet. Leaving this, Lawrence half pulled me towards him with the loose rope. A few steps more and I was beside him, and we descended together to Gardiner, cutting off the fixed rope high up, so as to leave as little as possible, and in a few minutes more we all three reached the small shelf of rock above the smooth slabs by which we had ascended the day before. It was the place where we had spent some time trying to avoid the steep bit we had just descended, and which had taken us nearly two hours.

This ledge is about three feet broad. We had got down the only place on the mountain that had given us any anxiety. It was warm and pleasant; all the day was before us; so we took more than an hour to lunch and rest.

On starting again we ought to have stuck to our old route and descended by the slabs, as we could easily have done; but after a brief discussion we arranged to take a short cut, by fixing a second rope and letting ourselves straight down the drop on to the lower slanting ledge, which I have spoken of as most probably Coolidge's route, at a point a few feet higher than where we had left it on the ascent.

We descended one at a time, as before, and, what with tying

and untying, took much longer than we should have done had we gone the other way. On gaining the ledge we turned to our left and went down it, soon coming across one of our marks; then striking down sooner than our old route would have taken us, we gave a wider berth to the falling ice, and got into the traverse leading to the top of the buttress. Along it we went; but it looked different, had less snow, and when we came near the end a steep rock, with a nasty drop below, blocked the way completely. It appeared so bad that I said we were wrong. As the others were not sure we retraced our steps, and by a very difficult descent gained a lower ledge. There was no snow on this, but the melting of the snow above made the rocks we had to take hold of so wet that we often got a stream of water down our arms and necks.

At last, after nearly crossing, it became quite impossible, and we turned back, having gained nothing but a wetting.

Below it was far too steep. Immediately above was the place we had tried just before. We could not make it out; we had been so positive about the place above.

We were just thinking of trying it again more carefully, when Lawrence pointed up at something, and there, sure enough, was the bit of red rag left the day before to show the commencement of the traverse.

We marked where it was, and then crawled back along the ledge on which we were. Scrambling up the steep drop, we made quickly upwards, and, turning towards our flag, found that the only way to it was along the very ledge where we had first tried, and which proved to be the traverse after all.

We were very glad to get into it once more, as for the last three hours we had been on the look-out for falling ice. Some had already shot over our heads, sending showers of splinters on to us, and one piece as big as one's fist had come rather closer than was pleasant. On our left the Glacier Carré kept up a regular fire of it, the ice falling with tremendous noise on to the rocks below. Every time it gave us a start, as we could not always see at once where the fall had taken place; and although the danger was more imaginary than real, it is not pleasant to be constantly on the look-out and flattening one's self against the rocks to avoid being hit. Fortunately the Meije is free from falling stones, and we never saw one near us the whole time we were on the mountain.

We soon crossed the snowy part of the traverse, and were again in front of the rock which had turned us back before. It looked no better; but on going close up we found a small

crack near the top, just large enough to get our fingers into, giving excellent hold. By this we swung ourselves up and across the worst part; then a little scrambling and a few awkward balancing steps placed us on the snow on the other side on the top of the buttress.

We thought we had only two hours' more easy descent, and our work would be done. But we made a mistake.

At first we went rapidly down, and were soon cheered by the sight of M. Duhamel's cairn, looking about five minutes off. I was in front at the time, and was just getting on to a short snow-slope, by which we had ascended the day before, when, doubting its safety, I asked the others to hold fast whilst I tried it. The moment I put my foot on the snow, all the top went away, slowly at first, then, taking to the left, went down the couloir with a rush. We tried again where the upper layer had gone away, but it was all unsafe; so we had to spend half an hour getting down the rocks where we had ascended in ten minutes, and it was not until 2.30 that we reached the cairn. The sun, which had melted our steps on the traverse, had been equally active here, for the bottle we had buried in the snow was left high and dry, with the cork forced half out. The wine was fortunately all in, and the rest of the things safe; so we made up for lost time by a heavy onslaught on the provisions. This took us so long that it was 3.30 before we continued the descent.

The couloir was not in good order and required care, Gardiner re-kicking all the steps and keeping close to the side; but the rocks below took us much longer than before. Gardiner, who was in front, did not get on as well as usual. At last, thinking we might get impatient, he showed us his fingers, which were bleeding in several places and awfully raw and sore. He had pluckily kept it all to himself until the real difficulties were over; but the snow of the couloir had softened his hands, and these last rocks were weathered granite, and very sharp and cutting; so he had to go very gingerly.

When about half-way down, we saw three men descending the snow from the Brèche du Râteau, on the other side of the valley. They answered our shouts, and kept stopping to look. It was the first time in Dauphiné that we had seen any other party actually out on an expedition.

At the bottom of the buttress another surprise awaited us, for as we descended the last twenty feet the weather-beaten face of Lagier, our porter, appeared above the rocks. The faithful old fellow said he had traced our descent by the

occasional flashing of the wine tin in the sun, and had come alone to meet us, bringing provisions, as he thought we might have run short. He had waited six hours for us, and had iced the bottle of champagne which had been left on the ascent. We opened it to see if the sun had affected it in any way, and then hurried down the glacier, taking off the rope at the moraine, and ran all the rest of the way on the snow to our bivouac like a lot of colts turned loose in a field, feeling it a great relief to get on to something on which we could tumble about as we liked without falling over a precipice.

On reaching the refuge we were very glad to find M. Duhamel there, who, with his two guides, the younger Gaspard and another, were the men we had seen on the snow.

M. Duhamel congratulated us most warmly on our success. After a short chat, and showing Gaspard pieces of the flag, we left them in possession of our blankets and one of our porters, and went down to La Bérarde, where we spent the next day (Sunday) in blissful rest, lounging about in the shade of the trees along the bank of the river, climbing in fancy the rock wall again and again, thinking, as the pleasant breeze took the smoke away from our pipes, of the cold and anxious night spent on the Glacier Carré, and knowing that no more in our dreams should we be haunted by three mournful figures coming back to La Bérarde, discomfited by failure, to drown their sorrows in Rodier's sympathy and *vin ordinaire*.

For the benefit of those who may go to Dauphiné next year I can say that the inns are now very different from those described by Mr. Whympier. The Society of Tourists has taken such wise and active steps that most of them are equal to the average small Swiss ones in out-of-the-way places, the prices generally being moderate, and even at La Bérarde there are six iron bedsteads for travellers and four for guides. Moreover Rodier's business propensities are kept in check by a wholesome tariff, in which even one lump of sugar and one sardine find a place. But, if leaving early, see that he sends in the bill the night before; for if left to himself he will bring it in at the last moment, explaining that, as he is tired and sleepy, it may not be made out with his usual accuracy. Amongst other mistakes to his advantage mind that he does not add in the day of the month, as he actually did with us. Such little danger signals as these, however, need not keep any mountaineer from leaving the well-known lines of Zermatt and Grindelwald; and whoever goes to Dauphiné will bring away with

him many a pleasant remembrance of good climbs and splendid mountain scenery, and, if it has been his luck to meet them, of many a courtesy and many a kindly act received from members of the French Alpine Club.

THE WEISSHORN FROM ZINAL. By G. A. PASSINGHAM.

LOVERS of the high Alps who have conquered most of the giants of rock and snow naturally cast about for something new; but such has been the zeal of the more active members of the Alpine Club that there is in Switzerland nothing, or next to nothing, new to be done, unless one can call an unexplored side of an old mountain 'something new.'

The first mountain ascent to attract my attention was the Weisshorn from Zinal. I accordingly suggested it to my guides, Franz Andermatten and Ferdinand Imseng, who both at once fell in with the idea. On July 17, 1878, we went to Zinal to try and make out a possible route up the mountain.

Having done this to our entire satisfaction, we waited patiently at Zinal eight days for fine weather. Being disappointed, we quitted it, and gave up all hope of ascending the Weisshorn that year.

On August 6, 1879, accompanied by Ferdinand Imseng and Ambrose Supersax, I crossed the Bies Joch to Zinal, with the view of making a serious attack on the Weisshorn. On the following day we left Zinal with a porter, who carried blankets and all other necessaries for a night on rocks. We found very good quarters on some rocks between the Weisshorn and Moming Glaciers. Starting the next day at 3.15 A.M., we hurried across the glacier until we were stopped by a large 'Schrund' at the foot of the Weisshorn itself. Imseng crossed the 'Schrund' and attempted to scale the rocks. Not being able to do so at that point, he returned, and made a fresh attack more to the left. Here the rocks were practicable, but very difficult and extremely loose. It took me half an hour to ascend the first thirty or forty feet. The rocks being loose, it required the utmost care not to kick stones down on those below. We continued our climb over loose rocks and small patches of snow for four hours, when we were temporarily stopped by a very difficult rock. Imseng, however, after ridding himself of the wine flasks, managed to scale it. I then followed, having to exert my whole strength to accomplish the feat, carrying my axe and a hundred feet of extra rope

at no little inconvenience. We then made rapid progress until within three hours of the summit, when we saw thick black clouds rolling up behind us. We immediately turned and descended with all possible speed, but in half an hour we were in the midst of one of the most terrible storms of thunder, snow, and wind I have ever experienced in the Alps.

The Rev. Mr. Watson was crossing the Rothhorn at the same time with Peter Anderegg and a son of Melchior Anderegg, a lad of only sixteen. They too experienced very bad weather. How we were to descend those difficult rocks we had but a short time before ascended, now covered by fresh snow, seemed a mystery to me. We, however, set to work in a desperate and determined way, clutching the rocks in a manner I had never clutched them before. Supersax led admirably. Imseng loomed up above me in the mist, a picture of strength and determination. We continued our downward course for about two hours, when we were temporarily stopped by a more difficult rock than the rest. I lowered Supersax down it. Imseng kept a tight rope on me, but when he came to it he said, 'Where did you get down, sir?' I said, 'There,' pointing to the place. 'Diable! I shall slip,' was the answer. He, however, managed, by passing first up, and then turning a little to the left, and afterwards fixing the rope over a rock, so that I might hold him in case of a slip, to descend it in fine style. From this point we encountered no very serious difficulty, but always found the rocks stiff. We descended by a much better and easier route than we had ascended by. Had we not found an easier way I do not believe we should have got down at all in such a state of the weather as we experienced. We finally left the mountain by a steep snow-slope, which we descended backwards, the fresh snow blowing up our sleeves and down our necks, and drifting down on us, sometimes mounting above our knees, until we quitted the couloir for the glacier below. We arrived at Zinal at 9.30 P.M.

On Monday, August 11, accompanied by Ferdinand Imseng and Louis Zurbrücken, of Macugnaga, I left Zermatt once more, with the intention of again attacking the Weisshorn on the Zinal side. We slept under some rocks four hours from Zermatt, and on the following day crossed the Moming on to the Weisshorn. Ascending the snow couloir we descended the Wednesday before, we found what we considered very good quarters for the night, but they proved to be anything but comfortable. We had but one blanket for three of us, and no wood to make a fire, and were in consequence very

cold. Our rope was spread out on the rocks to form our bed. We then had supper and lay down in a row, I being in the centre. I did not, however, derive much benefit from my central position, as Ferdinand and Zurbrücken got up about every half-hour, to try, by stamping, to keep up the circulation in their feet. Zurbrücken, thinking, I suppose, a pipe would impart a little warmth to his nose, took out his pipe, loaded it, and put it into his mouth; but his teeth were chattering to such an extent from the cold that he bit the amber in two. He, however, finished his pipe before lying down again. I seemed to feel the cold less than the guides.

We left our blanket on the rocks where we slept, as we could not carry it with us. Our provisions were cut down as low as possible, as we knew we had hard work before us, and did not wish to encumber ourselves unnecessarily. In fact, we had not enough to eat or drink. I had the horror of carrying 100 feet of extra rope.

We made a start at 3.45 A.M., but had not left more than half an hour before we were stopped by falling stones. Imseng at once unroped himself, and struck off to the left to look for a safer way. He, however, came back, after an absence of a quarter of an hour or twenty minutes, not having been able to find one. We once more returned to the snow couloir and the falling stones. Imseng seemed to have a great dislike to falling stones. He made us crouch under a rock for some ten minutes. He then made a rush for another rock farther on, Zurbrücken and I following. Here we stopped until the rocks for a time ceased firing. We then ran for more shelter, and in this way, watching our opportunity and running from shelter to shelter, we ascended the snow couloir and got out of danger from falling stones.

This kind of procedure was not a very good beginning of a hard day's work. Running up a steep couloir on frozen snow is not the best of ways to prepare one's muscles and wind for a long continuous climb. Had I not been in first-rate condition I could not have kept pace with Imseng. I never saw stones come down a mountain with such rapidity as they did here, although they were small ones, the largest not appearing larger than one's fist, they hummed and howled through the air in a very disagreeable and spiteful manner. I, for one, have a great dislike to that vicious whiz of a falling stone. Here we had time to have a good look at the mountain. I was struck by the huge cliffs of rock; they are the grandest I have ever seen; the arête, too, on the left stands out in a very bold, interrupted line, with one enormous tooth, or rather tower, of rock,

which effectually bars the passage to the top by the northern ridge. The summit from this point of view looks like a perfectly square tower of rock covered by a cone of snow.

We now went steadily to work on the rocks, which we found more difficult than on the first attack, ice having taken the place of snow; we found ice, too, where we had found bare rock before. These patches of glazed rocks caused us no small delay and trouble. Ferdinand did not consider the mountain in good condition.

After climbing for four hours without any incident worth mentioning, we made a short halt to enlarge the stone-man we had built on our first attack. I availed myself of the opportunity to eat a morsel of bread and cheese. We then cut our way up a slope of snow and ice, and again taking to the rocks, which seemed to get more and more difficult as we went on, we had a stiff five hours' climb before we made another halt. This was for the purpose of allowing Imseng to make another cast to the left, in order to find a way on to the arête, but without success. We were now above the great tooth on the northern arête. When Imseng had again roped we had another look round us. Our prospect of success did not here appear a cheerful one; the rocks on all sides, and especially above us, seemed perilously steep. I remember following with my eye the route we had taken, and thinking, with a heavy heart, what a grind it would be to descend those long smooth slabs of rock in case we could not get up. I thought we were beaten. Ferdinand seemed to hesitate for the first time. I said to him, 'Is it possible to climb up there?' pointing to some very steep and smooth rocks a little to our right. He muttered something about steep rocks and ice, and then went for the very place I had indicated. This proved to be the most difficult part of the whole ascent. We came to a patch of ice-covered rocks, at which Imseng stopped, and I suggested that I should climb up a little and put the rope round a rock whilst he cut steps in the ice, that I might hold him in case of a slip; he said I was right; so up I went, and passed the rope behind a small piece of rock. Ferdinand looked up and said, 'Are you quite safe?' He waited for the word 'Ja,' then went to work on the ice. We were delighted to see, upon ascending these ice-covered rocks, that we were on the summit of a ridge not far from the final peak of the Weisshorn. From this another arête (only separated by a few yards of smooth rock) led to the snow arête a little to the left of the summit.

We now built our second stone-man, ate of our scanty pro-

visions, drank copiously from nature's tap, and then, with renewed vigour, climbed on to the final rock arête. We were then soon on the snow arête, and reached the summit of the Weishorn at 3.15 P.M. Zurbrücken thought it impossible to gain this final rock arête; to me it looked impracticable; but Ferdinand said, 'Das ist nichts,' and he was right.

We stayed but a short time on the summit, then made the best of our way down to Randa, which place we reached at 10.30 P.M., after losing our way for an hour and a half on the grass slopes above it. We were going 18 hrs. 45 min. altogether. The snow in descending was in very bad order on account of the lateness of the hour; the descent was, however, mere child's play compared with the ascent on the Zinal side. We were favoured by a magnificent day.

The ascent was made straight up the Zinal face of the mountain. If future climbers make for our first stone-man, and thence right up to our second, they will have no difficulty about the route.

I can recommend the ascent as an interesting and difficult rock-climb, but one that must be taken in fine weather.

I cannot speak too highly of Ferdinand Imseng. His great endurance on difficult rocks, his care in avoiding falling stones, and his marvellous instinct in finding what I believe to be the only route up, coupled with his really splendid rock-climbing, are qualities that go far to make him the first-rate guide which he is. It must be remembered Imseng ate nothing until after we had built our second stone-man, which we finished about 2 P.M.

MR. GOSSET'S SURVEY OF THE RHONE GLACIER.

By A. CUST.

I happened to be sitting in the bureau of the Furca hotel one morning last September, making arrangements for my departure, when a gentleman next whom I had been sitting, without exchanging a word, at *table d'hôte*, requested me to make room for him to pass. He was the Federal engineer employed in surveying the Rhone Glacier. He spoke English, I found, and, our roads coinciding as far as the Glacier, we agreed to join company. By this fortunate incident I became acquainted with Mr. Ph. Gosset, of Bern, and, ensuing bad weather detaining me, had on two days an opportunity of observing the surveying proceedings, which, as I was given to understand, I was the first member of any Alpine Club, Swiss or foreign, to witness.

The survey of the Rhone Glacier which Mr. Gosset is conducting is

the first systematic attempt of the kind. It has now been carried on for six years, and no pains have been spared to work it out with the utmost completeness and accuracy that circumstances permitted. The general design is comprehensive, and on the details the most conscientious, and I may say loving, care has been spent. It was suggested in the August No. of the Journal that 'each ice stream should be studied separately: ' it is enough to say that the present undertaking is a model for all similar surveys.

On September 1, 1874, the first stone was laid of a row extending in a mathematically straight line across the glacier from bank to bank between two accurately determined stations of observation. The labour was enormous. The stones were placed touching each other along a line over 1,000 mètres long; they were painted on both sides, and before they could be painted they had to be cleaned. At every 20 mètres a comparatively large stone was placed, with a conspicuous number marked on it. Four such rows were made, two above and two below the main ice-fall, respectively distinguished in order from the top by the colours—red, yellow, green, and black. This was part only of an exhaustive scheme of survey which Mr. Gosset had drawn out beforehand to serve as a pattern scheme for a glacier survey, and which, embodied in a volume and illustrated by interesting photographs of the first season's operations, was subsequently awarded a medal at the Geographical Congress in Paris. Mr. Gosset was not the man to do a thing by halves, and, once entrusted with the order from the Federal Office, whose action was solicited in the first instance by the Glacier Commission, jointly appointed some years before by the Swiss Naturalist Society and the Swiss Alpine Club, he set on foot a work which 'far surpasses in thoroughness and grandeur of execution (*Gründlichkeit u. Grossartigkeit der Ausführung*) all that has up to the present time been accomplished in this department of topography.'* It is provided by Swiss law that on an individual or society volunteering to pay half the expenses of a map survey on the regulation scales, the Government shall furnish the other half and also the surveyors; and the following year (1875) the important step was gained by Mr. Gosset of procuring the exceptional extension of the benefit of the provision to the Rhone Glacier survey, though on a different scale. The survey was important to the Government, for the rise and fall of the Rhone being already carefully noted, the compliment might as well be paid to its source.

The basis of the whole was a map of the glacier on the large scale of $\frac{1}{50000}$, with horizontal parallels at every 5 mètres of vertical height. It was proposed to mark down on this not only the more stable phenomena, as the ice-worn rocks on the bank, but features, as of crevasse or moraine, that at first sight appear too shifting. Circumstances, however, unfortunately have not allowed the completion of this important and laborious part of the undertaking. On this plan were set

* *Ueber die physikalisch-topographische Aufnahme des Rhonegletschers durch Herrn Ingenieur Gosset in den Jahren 1874-1876.* Prof. E. Hagenbach-Bischoff. Basel: 1877. S. Nat. Soc.

down the positions of the lines of stones, and in particular of every numbered stone, and of more than fifty fixed stations on the banks, secured with all the permanence permitted by the difficult nature of the ground, which formed the basis of the measuring. The stones were further marked in detail on special plans on a scale five times as large. Every subsequent September, *i.e.*, during six years, these four lines of stones have been carefully traced anew on the plans, the position and actual height above the sea of every numbered stone being ascertained, where possible, by direct measurement. Some one space also between two large stones is selected in each row for an individual measurement ('differentiation') of the small stones. Often the numbered stones have fallen into crevasses, and have to be followed down by man and instrument; hence, as it cannot be known beforehand what difficulties will have to be encountered, the party are provided with rope and ladder, and the survey has not been unattended with serious risk and accident. Mr. Gosset himself, in making an awkward leap against the side of a crevasse in order to rescue a porter who had fallen into it, sustained an injury which brought on a very serious illness. Sometimes the stones disappear altogether, or are lost one year and come out into sight another.

By this means a searching scientific measurement of the movement of the Glacier and the actual height of its surface from year to year on the lines of observation is obtained. It is a curious phenomenon that the large stones where the surface is uneven move slightly more quickly than the small ones, slipping down declivities, or tabling and falling off their pedestals. The small stones also by slipping off ridges get much huddled together. The lines now sweep across in widely extended curves. As I watched the red line being picked up, and at first starting was led on for hundreds of yards parallel to the bank, I felt almost inclined to receive with incredulity the statement that those very stones had once lain at right angles to their present course. The mists which had at first obscured the Glacier having cleared off, the day was now a particularly favourable one. It is ill weather that suits nobody, and from the mountaineer's point of view a more wretched day could hardly be conceived, cold, cloudy, rainy. But the engineer's heart was rejoiced, for there was no wind, and there was no heat. It is fearful work, he tells his shivering visitor, surveying for hours in a wind with the upright bar rocking about, and rendering the observations protracted and uncertain; and there is a wind down the Glacier on a fine day as regular as the sea-breeze at Nice. But for this, indeed, the Glacier could hardly exist between its sun-heated banks. Again, the heat makes it a labour to plant the three-legged table on the ice, when as is often the case—and a troublesome part of the business it is—a temporary intermediate station has to be adopted. It is then necessary to pierce down to the blue ice, otherwise in ten minutes one leg or another would sink in and the level be altered. The two stations (*Fixpuncte*) for the line were at some little height on the banks, and, by means of converging lines carefully drawn on the rocks, the sites could be recovered in the event of the cairns being swept away. This was frequently the fate of the cairn on the west

bank, which rested on a remarkably convenient little plateau composed of a single glacier-polished rock, jutting out from a wilderness of *débris*, and the sole available spot in the neighbourhood. When the original survey for the Federal map was made, some twenty-five years ago, this rock was covered with ice about 110 feet thick. The minimum of fall seems now to have been reached in this part of the Glacier, and, as the rise that may be expected would again bury the rock, Mr. Gosset intended to engrave on its hard and beautifully smooth side a deep inscription, to supply for another generation of scientific explorers a means of measuring the grinding power of the Glacier.

The foot of the Glacier is every year surrounded with a marginal rim of stones roughly secured in wall-like fashion and tarred over. Seen from above, these now deserted curves, like the successive fringes of weed and litter left by the waves of an ebbing tide, afford striking ocular demonstration of the stages of glacier retreat. It is now a considerable walk (800 mètres) from the border of 1856, when the glacier began to retreat, to the attenuated remains of the formerly imposing 'fan.' The ice-level has gone down 360 feet in this lower part of the glacier. Even stone tarring requires practice. The first year, as Mr. Gosset and his assistant surveyor, seeing that the porters seemed not to fancy the black liquid, set to slashing away opposite each other with the tar, the one with a large brush, the other with a branch of juniper, they got some of it splashed up into their eyes, with distressing after results, by which they were placed for the time *hors de combat*.

I will now briefly describe the instruments employed. The Swiss Government I understand is the only government which employs the plane-table with distance measurer (*Messtisch mit Distanzmesser*) instead of the theodolite, and it is to this cause that the rapidity of their map surveying is due. The table has a movable surface capable of being adjusted to the level by powerful screws, on which is stretched by rollers inserted in it the sheet of the plan, the centre of the latter being so placed when the table has been 'oriented' as to correspond exactly with the true site of observation. A telescope for reading distances and taking vertical angles is moved freely about the surface of the chart, having attached to its flat base a movable parallel ruler, which is moved to the centre point when the observation has been made. The line then drawn with the pencil along the latter indicates pictorially as it were the angle at which the object lies with reference to the base line; and its horizontal distance from the station being at the same time measured and reduced to scale, the correction for the difference of height having been made on the spot and without any trouble by means of a 'sliding ruler' (*Rechenschieber*), its position on the plan is there and then marked down. Lastly we have, most conspicuous of all, the umbrella protecting the station from sun and rain, whose dome-like top was sometimes the sole indication to the rest of the party of its position. By this simple and convenient process the observation of height and position of any single object is made with wonderful accuracy, and also recorded in the most ready form for practical use, in a space of little more than thirty seconds.

While one division of the party was thus employed, another was

busy in hunting out the numbered stones, and planting and balancing on each when found an upright bar of wood (*Messlatte*), conspicuously divided into mètres and décimètres, which might easily be read off as included between the two horizontal wires of the telescope, and capable of telescopic extension to a length of $4\frac{1}{2}$ mètres. It was carried by a veteran guide, Peter Sulzer, large and square of face and lanky of limb, who held it with imperturbable composure on the edge of crevasses, or in the bitterest cold, solidified in one attitude and with an expression of rigid patience which was each time a study. I only once saw him smile, and that was when he was shown a sketch of himself. Near and about this stolid centre there skipped, satellite-like, a juvenile porter, who wore on his back a box containing slides, which when displayed outside denoted to the station party the number of the stone or other concerted signal. Hence during the moments of observation there was the comic spectacle of the then motionless pair, upright-holder and 'Signal-Jack,' as we may call him, the one with his face, the other with his back to the distant group, waiting for the liberating sound of the observer's whistle. Mr. Gosset meantime was rectifying the upright, taking general notes and observations, and sketching for future transference to the plans the positions of the intermediate small stones.

We may view with satisfaction the fact that this the first complete glacier survey has been devised and carried out by an Englishman and a member of our own club. I am not at liberty to speak of results, except that some of a very interesting nature have already been obtained.

The two societies which suggested the survey early split, parting company before the first campaign was finished. The S. A. C., after at first undertaking its sole support, finally requested Mr. Gosset to let them off. He did so at once. The Federal Government has not sufficient funds at its disposal for such an object, and the survey would have fallen through had not Mr. Gosset, unwilling that it should come to nothing, kept it up so far at his own responsibility, himself advancing a considerable part of the expenditure. It may, however, be doubtful whether he will continue to be able to do so, and it is to be hoped an arrangement will be come to to prevent a project worked out with ability, with conscientious care and I may say enthusiasm, and with undoubted success up to the present time, from coming to an untimely end. The letters in the August No. of the Journal testify that the subject is one to which attention is likely to be called.

The following observations on *Glaciers and Meteorology* made to me by Mr. Gosset have reference to the above letters.

All the governments take in hand meteorological observations. In Switzerland there are stations over the country, and observations are constantly being made. The rise and fall of every river in the country is daily measured. This department therefore should be left to the government, and all the Alpine Clubs should ask is that stations should be made near the glaciers. The expense should not be taken out of the hands of the government. What the clubs should take in hand is what the government does not attempt, viz., the connecting

link between the meteorological department and the glacier measurement. All the clubs should combine to have the glaciers surveyed: it is too much for one club. It is of course for the benefit of the government, and no doubt the latter would bear a part of the expense. The actual measurement of the glaciers would be fitting work for Alpine Club men.

One part of meteorology they might concern themselves with, and that is the measurement of the relation of condensation and evaporation in a glacier. If pieces of ice be weighed near the foot of a glacier, they will generally (in eight cases out of ten) be found by the end of the day to have *increased in weight* on a fine day. This is owing to the fact that in certain conditions of the atmosphere, when heated by the sun and coming in contact with ice, it deposits on the surface of the latter part of the moisture which it contains. This freezes on the ice and so increases its weight. Thus the glacier constantly feeds on the atmosphere in fine weather, and thereby prevents itself from evaporating away. And so we have the noteworthy fact that the amount of water poured by the Rhone into the lake in one year is greater than the amount of rainfall (*i.e.*, inclusive of the snowfall on the mountains) during the year in the whole valley.

'Talking of rendering glacier surveying popular amongst Alpine Club men,' Mr. Gosset writes, 'I fancy the only chance there is of such a thing ever coming to pass is this: if glaciers did not move, no mountaineer would care to know much about them, but as they do move there is some charm in the uncertainty of finding out how to bring on paper, in other words, to map, a system of crevasses such as we see on the glaciers of first order. It is something like shooting a bird on the wing.'

'There is another charm to come. If once a glacier, or say the surface of a glacier, were reduced, so to say, to a small scale on a piece of paper, the next thing would naturally be a certain degree of curiosity about its depth. Of the two hundred or so measurements I made of large crevasses and moulins not one succeeded; there was no getting below 80 feet; so I calculated what I could not measure. The result was that the névé out of which the Rhone Glacier flows must be about as deep as the Lake of Geneva. There is most unquestionably a delightful sense of uncertainty in such a calculation, so a "descent" will some day have to be made. The Dent du Géant will no sooner have a cairn on its top, than the ice-axe, and perhaps something else, recently used with effect on solid ice, will be at work in the moulins. Instead of collecting summit stones, a man will pull a piece of granite from the glacier bottom out of his pocket, and wonder at the effect ten thousand years of polishing has had on it.'

ALPINE NOTES.

GUIDES' STORIES IN ALPINE PERIODICALS.—All who are interested in mountaineering ought to desire to keep, as far as possible, its annals free from personal attacks or controversies. With this object it appears

expedient, before another season begins, to point out the source of many of the unfounded stories which have from time to time gone a partial round of the press, and to warn travellers against the careless repetition, and editors against the hasty reception, of tales coming from this source—the conversation of guides.

We should be very sorry to impute to Alpine guides, as a class, any exceptional want of veracity in their graver moments. There are among them many men in whose word, when given under a sense of responsibility and as to facts within their own knowledge, we should place thorough confidence. Exactness in memory and statement in ordinary conversation is, however, difficult even for those who feel its importance. Where, as among Alpine peasants, it is hardly regarded as a virtue or a duty it is not to be looked for. Frequenters of Alpine centres know that the guides-room is frequently a source of wild, foolish, and sometimes malicious stories. There are few travellers of any experience but have discovered that in their lighter moments many very good guides are inclined to romance, and that their romances are liable to be coloured not only by their own local prejudices and jealousies, but also by those which they imagine to exist in their employers. For example, to assume serious international jealousy between climbers must to most men of education seem an absurdity. But guides do not always understand this, and frequently play with truth in the hope of pleasing. Again, they are well aware of the passion for 'new expeditions' which exists among climbers, and sometimes do not stick at a trifle in gratifying it.

Alpine legends naturally grow up chiefly round the two most important incidents in the lives of those who invent them, first ascents and accidents.

Legends of the former class are comparatively harmless—they are simple misstatements of facts, capable, as a rule, when worth it, of speedy correction. If the mischief stopped here it would not be worthy of comment. Mr. Cust some time ago* expressed in a few words all that need be said on this branch of the subject. 'Before accepting (for publication) a guide's version of an earlier ascent it is always desirable to consult those he has accompanied.'

But the legends which grow up round accidents are sometimes of a very offensive and mischievous character. Facts are distorted or disregarded so as to cast imputations on guides or travellers, which a more careful consideration of the case would have shown to be wholly or in part undeserved. Everyone knows the infamous stories which were current in Zermatt after the accident of 1865, and there have been more recent instances which we forbear to cite, there and elsewhere in the Alps.

In the early days of mountaineering stories of this sort, like a mountain echo, rose and died away within the walls of the same valley. But of late years, owing to the increased interest taken in climbing, and the consequent multiplication of specially Alpine periodicals, some of them have found their way out into the world.

* *Alpine Journal*, vol. viii. p. 225.

The practical question is: How can this nuisance be stopped? It is obviously impossible to change of a sudden human nature; to deprive Alpine peasants of their powers of invention, their prejudices, or their tongues. But the real culprits are those who make themselves responsible for such stories by repeating them in public prints, and these people ought to be within the reach of remonstrance. In our opinion the growing evil may and should be cut at the root by editors making it a rule to refuse to publish any statement affecting either a guide or traveller unless they are able at the same time to *place before the public* the name of the writer and the precise grounds of his assertions. If this rule were established, an editor of moderate experience would in most cases be able to judge whether the statement offered to him belonged to that limited class in which the general interests of the Alpine public render it necessary to attack an individual; and correspondents would think twice before they made themselves responsible for stories which, being formally authenticated, would be liable to a searching examination at the hands of the body to which the climber, whose conduct was impugned, happened to belong.

So far as the 'Alpine Journal' is concerned, no attention will henceforth be paid to any stories sent to it, or published elsewhere, which are not thus authenticated.

THE DEATH OF J. BRANTSCHEN.—Since the publication of our last number we have been informed by Messrs. C. E. Freeman, A. C., and the Rev. A. Sloman, A. C., that with J. A. Carrel of Val Tournanche and A. Supersax of Saas as guides they left Breil early on the morning of August 13 to ascend the Matterhorn. Following the course recommended by Brantschen to his employers, they climbed straight to the top of the mountain, the rocks of which they found in very good condition. On their descent they slept at the Zermatt hut.

This party must have passed the Breil hut where Brantschen was lying, some six hours after the Swiss had left it. Unfortunately the hut lies at some distance from the direct route to the top, and knowing nothing of what had happened, Mr. Freeman and his companions did not visit it.

It is right to add that Messrs. Schiess and Lüscher had, on their side, no knowledge that a few hours' waiting would have brought them assistance.

The evidence taken at the judicial inquiry on Brantschen's death has not been published.

EXPEDITIONS IN THE BERNESE OBERLAND.—Mr. Craven sends the following notes:—

The late Dr. W. O. Moseley and Mr. A. E. Craven, with Peter Rubi and Christian Inäbnit, after ascending the Gross Doldenhorn by the usual route on August 5, followed the arête to the summit of the Klein Doldenhorn.

Viescherjoch.—Dr. W. O. Moseley with the same guides crossed the Viescherjoch from the Concordia hut, descending to Grindelwald.

Lohner (July 30).—Mr. A. E. Craven with Gilgian Ogi (son) as guide made the third ascent of this peak, the first by an Englishman.

Zahlershorn (August 3).—The same made the first ascent.

Blumliſalphorn (September 16).—The same and Johann Ogi descended from this peak direct to the *Æschinen See*, leaving the *Æschinen Rothhorn* on their right.

FIRST ASCENT OF THE SCHNEEHAUBE IN THE BERNINA ALPS (3,877 mètres, 12,708 ft.).—Dr. Paul Güssfeldt sends the following note:—

The Monte Scerscen, the centre of the Bernina Alps, forms an arête of 8,900 mètres in length, in the middle of which the highest peak rises to 3,967 mètres. The south-west peak, which commands the *Roseg-Sattel* is formed of bare and steep rocks, covered on the top by a very regular and distinct snow pyramid of about 60 mètres height; I therefore propose for it the name of 'Schneehaube,' which means snow-turban or snow-cap. [See *Jahrbuch S. A. C. XIII.*, 'Erste Ersteigung des Monte Rosso di Scerscen']. This mountain, not yet having been ascended, I set out for it on September 15, 1879. My only companion was the guide Hans Grass of Pontresina. We wanted to try the Italian side, as the other one was known to us from the ascent of the highest peak in 1877. We left the *Murtelhütte*, 2,390 mètres, at 3.35 A.M., reached *Sellapass*, 3,804 mètres, at 6.10, and descending to the upper plateau of the Scerscen glacier came to the rocks of the Schneehaube. They form a spur projecting into the Scerscen basin. The scenery is very grand. *Piz Roseg*, the Schneehaube, the highest top of M. Scerscen, *Crastagüzza*, and *Piz Argient* form a semicircle, from which narrow ridges fall to the Scerscen glacier. At 7 o'clock we entered a secondary cirque; on our left we had the walls of *Piz Roseg*, on our right those of the Schneehaube, in front the *Roseg-Sattel*; turning immediately to the right we reached the *bergschrand* after half-an-hour's climb over a pretty steep ice-field. The passage of the *bergschrand* is as easy as it is dangerous, the only possible place is the mouth of a snow-couloir, which serves as a funnel to falling stones and avalanches. This couloir is the most eastern in the cirque. We managed to get out of its trough, ascended the icy slope of which it forms a part, then turned right to the rocks of the spur mentioned above. In following its arête we had a view of the cirque of the *Crastagüzza-Sattel*. At the height of 3,500 mètres we had to leave the arête by turning to the left; and crossing the couloir, we met with another one, followed it nearly to its end, and then had to do good genuine rock-climbing; some of the difficulty of which consisted in the uncertainty of success. At 10.40 A.M. we hit the crest of the Scerscen at a point 3,845 mètres in height, distant about 350 mètres from the highest summit of M. Scerscen, and 120 mètres from the top of the Schneehaube. The change in the landscape was overpowering, the narrow view of the rocks close at hand changing all of a sudden into the vast prospect of the ice and snow fields of the *Tschierva Glacier*. We turned to the left in order to try the snowy ridge which leads to the top of the Schneehaube. This overhangs terribly on the Italian side; the other side presents a slope of pure snow too steep to be crossed. No choice was left; if we persisted, we had to trust ourselves to the overhanging snow—which is a very unpleasant feeling to experienced people. The snow was found to be powdery, but not too loose.

Grass cut 170 steps; we made the passage in 25 minutes. We reached the top at 11.5 A.M. It completely overhangs, but there is no danger, the slope allowing a safe footing. We stopped 38 min., and then made the bad passage in 9 min. The descent to the Scerscen Glacier was effected in 2 hrs. 55 min. The whole expedition from Murtel-lütte, 2,390 mètres, to the top, 3,879 mètres, and down to the Roseg-restaurant, 2,000 mètres, took us 14 hrs. 50 min.

This way to the Schneehaube opens a new route to the highest point of M. Scerscen, the portion of the arête which leads to the latter being far less dangerous than that which leads to the Schneehaube. To cross the Scerscen from the Swiss side, by hitting the arête on the highest point, then following it in the direction of the Schneehaube, and descending the way just described, would be a fine but arduous expedition. It took me 11 hrs. 55 min. from Alp Misau (near Roseg-restaurant) to the top of M. Scerscen, and 6 hrs. 38 min. from the Scerscen arête over Sella pass to the Roseg-restaurant; allowing 1 hr. or 1½ hrs. for the 350 mètres of the arête, the crossing of the Scerscen will require 20 hrs.

ALPINE MEETING IN THE LAKES.—A meeting and dinner of Members of the Alpine Club has been arranged to take place at the Portinsgale Hotel, Derwentwater, near Keswick, on Saturday, April 3, at 7.30 P.M. Morning dress. Intending diners are requested to send their names, and the names of any friends they may wish to introduce, either to Mr. Frederick Gardiner, 48 South Castle Street, Liverpool, or to Mr. E. Hulton, Union Club, Manchester. The cost of the dinner, including wine, will be one guinea a head.

Some members of the club intend meeting at Wastdale Head on Friday, April 2, and walking to Portinsgale *via* Buttermere next day, making the ascent of the Pillar rock *en route*. As the accommodation at Wastdale Head is very limited, special notice is requested from all who intend joining the Pillar Rock party. Wastdale Head is best reached by train from Carnforth Junction to Drigg, and thence by carriage. It is requested that all heavy luggage be sent direct to care of Mrs. Bell, Portinsgale Hotel, near Keswick, by rail, as only light luggage can be sent over the Sty Head Pass from Wastdale.

REVIEWS.

THE ASCENT OF THE MATTERHORN.*

It was natural that Mr. Whymper should desire to describe the ascent of the Matterhorn as only an incident, even if the central incident in an Alpine career full of many adventures and many interests. Mountaineers followed with enthusiasm his brilliant campaign; but by the public his volume of 'scrambles' was thought of simply as the story of the conquest of the Matterhorn. The excursions that have been made

* *The Ascent of the Matterhorn*, by Edward Whymper. London: J. Murray, Albemarle Street. 10s. 6d.

in this second and lighter edition will hardly be objected to by the most ardent students of Alpine literature. Others, perhaps, will urge in the interest of dramatic unity that the volume might have been brought even more closely into accord with its present title.

The story of the Matterhorn must always be one of unique attraction. Like a good play, it resumes and concentrates in itself the incidents of a prolonged struggle—the conquest of the Alps. The strange mountain stood forth as a Goliath in front of the Alpine host, and when it found its conqueror there was a general feeling that the subjugation of the High Alps by human effort was decided, a feeling which has been amply justified by events. The contest itself was an eventful one. It was marked by a race between eager rivals, and the final victory was marred by the most terrible of Alpine accidents.

As a writer Mr. Whymper has proved himself equal to his subject. His serious, emphatic style, his concentration on his object, take hold of his readers and make them follow his campaigns with as much interest as if some great stake depended on the result.

No one can fail to remark the contrast between the many unsuccessful attacks which preceded the fall of the Matterhorn, and the frequency with which it is now climbed by amateurs, some of whom it would be courtesy to call indifferent climbers. The moral element has, of course, much to do with this. But allowance must also be made for the fact that the Breil ridge, which looks the easiest, is still the most difficult, and in its unchained state was far the most difficult. The terrible appearance of the Zermatt and Zmutt ridges long deterred climbers, yet both have now yielded to the first serious attack.

We do not wholly approve in principle of the list of ascents added as an appendix. Such a list, moreover, is of little use unless it is complete and accurate, and both these qualities, as Mr. Whymper himself warns us, are wanting in that given.

Full justice was done to Mr. Whymper's woodcuts on the first appearance of his work. The knowledge of the climber and the skill of the engraver are here inspired by the spirit of an artist. The combination, as regards the Alps, is unique, and we feel this the more when we contrast Mr. Whymper's drawings with the cut now placed as the frontispiece, in which Mons. G. Doré has collaborated. There are several new illustrations to this edition; among them a portrait of Chanoine Carrel, a sketch of a herd of chamois, the view of the Zermatt hut lately given to our readers, and one of the top of the Matterhorn in 1874.

ALPINE PLANTS.*

This charming volume contains 100 plates, coloured by chromolithography, of Alpine plants. It has been brought out in Austria, under the supervision of Messrs. Graf and Petrasch, successively directors of the Botanic Garden at Graz. The English edition is edited by Mr.

* *Alpine Plants painted from Nature*, by J. Seboth. Edited by Alfred W. Bennett. Vol. i. London: Swan & Allen, 1879.

Alfred Bennett. The scientific descriptions of the plants depicted are taken mainly from Neilrich's 'Flora of Lower Austria,' Hausmann's 'Flora of Tyrol,' and Moritz's 'Flora of Switzerland.' The unbotanical traveller will be attracted by the great beauty of the plates. The drawing appears excellent, and the colouring is much in advance of anything we have yet seen attained by a mechanical process in works of this description. It is proposed to complete the work in subsequent volumes.

GLACIER OSCILLATIONS.*

Mons. V. Payot is one of those students of nature who do honour to their native place. His collections are well-known to visitors to Chamonix, and he has published numerous works, chiefly botanical, useful to travellers. The little volume now before us is full of valuable information. We must remark, however, that the author's theory that in the twelfth century the Alps were almost wholly denuded of ice cannot be sustained in the face of historical documents, and that some of the statements, here repeated, as to the connection of Chamonix and Courmayeur, have been conclusively disproved.

We give, on M. Tairraz's authority, the following important facts and figures as to the present retrogression of the ice in his valley

Measurements, November, 1868 to September 30, 1869. *Glacier du Tour*: Retreat, 700 mètres (about). *Glacier d'Argentière*: Retreat, 480 mètres. *Glacier des Bois*: Retreat, 757 mètres. *Glacier des Bossons*: Retreat, 81 mètres. We conclude with a statistic which will partly console mountaineers for the rigours of our two last winters. *Glacier des Bossons*: November 3, 1878 to June 19, 1879. *Advance*, 12 mètres; June 19 to July 2, further advance, 1 mètre.

NOTICES.

'ANNUAIRE DU CLUB ALPIN FRANÇAIS,' 1878 (Paris, 1879).—The French 'Annuaire' is a volume of 700 pages, handsomely printed and profusely illustrated. This is in addition to the 'Bulletin,' which nearly equals our Journal. This startling contrast to our own literary activity is explained by a reference to the budget, which shows an annual expenditure of 21,000 francs (840*l.*) on the Club publications.

Dauphiné and the Pyrenees are the two regions to which most attention has been paid. MM. Guillemin's and Salvador de Quatre-fages' and M. Duhamel's accounts of their numerous bivouacs and ascents will interest those who have any knowledge of these districts. It is curious to notice how well the writers have taken to heart the advice given them by the founders of the 'Annuaire.' The business-like sobriety and conciseness of their style is worthy of an official report. We hope our French comrades will not go too far in this direction.

* *Oscillations des quatre grands Glaciers de la Vallée de Chamonix, &c., par Venance Payot.* Genève: Sandoz, 1879.

We by no means wish to see them abandon the traditional lightness, which makes good French books of travel more supportable perhaps than those of any other nation.

From the French Alps to the Pyrenees is a natural step. We are glad to see the French Club taking up the work begun by Mr. Packer and Count H. Russell, but neglected of late years by our own members. There is much still to be done, particularly on the Spanish side, in the way of mapping and exploration.

Among the miscellaneous papers are, an excellent article on 'Precautions for Health in the Mountains,' by the late M. Viollet-le-Duc; a long, but thin one, on Alpine Art; and some well-meant remarks on 'Le Rôle des Femmes dans les Clubs Alpains,' by a gentleman who is apparently anxious to climb in company with 'somebody else's sisters.'

In the illustrations, as in the text, accuracy is the first characteristic. In place of the tremendous scenes of the 'Tour du Monde,' we have photographically exact and valuable views. They are produced by a new process, but do not compare in finish and spirit with Mr. Whymper's woodcuts—a specimen of which is bound up with them.

'JAHRBUCH DES SCHWEIZER ALPENKLUB,' 1878-9.—The Swiss Jahrbuch is, as usual, a varied and interesting volume. The most spirited feat of mountaineering recorded in it is the ascent of Piz Bernina from the Tschierwa Glacier, by Dr. Güssfeldt.

The other articles on the Bernina Group, the Excursions Gebiet for last year, are good as far as they go, but add little to the Guide-books. Small use has been made of the numerous notices in the 'Alpine Journal' dealing with the outskirts of the group. The Editor in his preface has, however, anticipated our criticism by reminding his readers of the claims of the less-known mountains of Val Masino and the Oberhalbstein. An accurate map of the southern side of the range, in accordance with the new nomenclature, much altered from that of the 1:100000 Dufour map, is still wanted. Beyond the limits of the Federal Survey even 'Ziegler' is far from satisfactory. We trust, therefore, that by this time, despite the reluctance of the Pontresina guides to go out of sight of their home, the Italian side of the chain has been well worked; and that the 'Jahrbuch' for this year will give us full topographical details as to the ranges round Val Masino and Val Malenco.

Professor Heim contributes a paper on erosion in the Reuss basin. The result of measurements carried on during 1877 seems to show that the surface is lowered on the average one millimètre in $4\frac{1}{2}$ years. The soundings taken in the Bay of Uri were remarkable. Between a cliff S. of the Grütli and another N. of Sisikon, beginning at 65 mètres from the W. shore, the depth varied from 203 m. to 205 m. at 255 m. distance; and to 204 m. at distance of 780 m. (halfway across). 160 m. from the E. shore the depth was 197 m., and the only sudden variation was at 70 m. nearer the shore, where a change occurred to 102 m. The banks at either end being vertical, the bottom presents an even plain of fine sand, not shelving to the base of the cliffs by gentle slopes of *débris*, but meeting them at a sharp angle. Reckoning the surface of the Urner See at 4 square kilomètres, it would be filled up at the present rate of erosion in 20,000 years, and the end

of the Lake would then be at Brunnen. The same author writes 'Ueber Nebelbilder.' This is a scientific paper, with illustrations, on the illusions caused by distorted shadows thrown from a party on a mountain top or ridge into a dense vaporous body below, a subject on which the author writes with exceptional experience. One of the illusions the Professor describes provoked a dog to bark at it. Mr. E. Whympfer mentions remarkable examples of this phenomenon in his 'Ascent of the Matterhorn,' a peak which seems to be peculiarly favourable to 'cloud-pictures.'

We give a list of the remaining articles:—H. Ferrand: 'Vingt jours dans la Savoie Méridionale.' Dr. H. Düby: 'Das Jungfrauojoch.' E. von Fellenberg: 'Geologische Wanderungen in Aare und Rhonegebiet.' S. S. Schiesser: 'Der Hohe Thurm.' G. Studer: 'Eine Rundtour von Tarasp-Schulhaus.' Dekan Heim: 'Ins Salzkammergut.' Prof. F. O. Wolf: 'Saillons-Umgebung und seine Marmorbrücke.' G. Meyr von Knonau: 'On Frederick I.'s passage of the Brenner in 1154.' Dr. H. Düby: 'Saracenen und Ungarn in den Alpen,' already alluded to in a previous number. A. Wäber: 'Die Sprachgrenzen inden Alpen.'

Amongst smaller communications is an account of an eruption of the Mürjelen See, which commenced at 8 A.M., July 18, 1878. At 4 P.M. the level had fallen 1 mètre. At 4 A.M., July 19, it had fallen 4 mètres, and at 2.30 P.M. on the same day the lowest level was reached, 43 mètres. The amounts of water that ran off during these intervals were estimated at 400,000, 1,130,000, 5,770,000 cubic mètres. The enormous increase in the rate of outflow must be accounted for by the enlargement of the passage. The Rhone at Brieg rose nearly five feet, but as the water was low it occasioned no damage. Three days later the case might have been different. This phenomenon is said to happen every seven years, and it was expected in 1878.

It will be seen that the members of the Swiss Club continue to make the most of their mountains, not only by climbing them, but also by researches in the various branches of knowledge connected with them.

THE PUBLICATIONS OF THE GERMAN CLUB.—The 'Deutscher-Oesterreichischer' Club, in place of a large volume, gives its members two periodicals, the bi-monthly 'Mittheilungen,' and the more solid 'Zeitschrift.' The last number of the latter is mostly devoted to the German Alps. Herr Trautwein, the editor, contributes an instructing monograph on the Kaisergebirge, a fine limestone group, north of the Inn valley. Herr Merzbacher writes pleasantly of his ascents in the Dolomites. Monte Pizzoni di Sopra, Monte Sciarra, and the Cima di Bosco Nero are chronicled as *new* ascents. As a curious instance of the growth of a guides' legend, we note the statement of Dr. Petersen in the 'Mittheilungen' (p. 132), that Mr. Dent employed men for some months in hewing steps in the rocks of the Aiguille du Dru!

The different sections of the Club are busily occupied in building and repairing huts, improving mountain paths, and removing difficulties in mountain ascents. A pamphlet lately published at Gratz shows that since its foundation this Club has spent 180,000 marks (or over 9,000*l.*) on such objects.

Comparisons in this respect are sometimes instituted abroad between the Foreign Clubs and ourselves. We do not for our part question the judgment of those who have given the Foreign Clubs a development different from our own. These bodies exist under different circumstances. As part owner of the Alps it is natural that each of them should improve its own property in its own way. The statistics quoted above amply prove that they require no assistance in the work for which their organisations have been specially adapted. But in order to obtain the means to do so much, they have had to make a great sacrifice—practically to dispense with qualifications of any kind. An association of which not one member in twenty climbs can hardly be called 'Alpine' in the strictest sense of the word; an association of 5,000 to 6,000 members ceases to be, in a social sense, a Club. It is, in truth, an Association for the Promotion of Alpine Knowledge, the members of which are no more responsible to one another than those of our Society for Promoting Christian Knowledge. For their own sakes members of the Alpine Club will never give up those restrictions on election which have enabled it to maintain its position as a body of gentlemen and mountaineers, and its social character as a Club. Nor is such a policy to be hastily condemned as selfish. We believe that, for the sake of the world, it is well that one real Alpine Club should exist; though, let us repeat, for fear of misapprehension, we not only do not dispute, but cordially acknowledge, the wisdom of those who, under different conditions, adopted a different model for the Alpine Societies of the Continent.

The accident on Monte Cevedale has resulted in the establishment of a Guides' Fund, a doubtful benefit, if it discourages thrift in guides. Could not some means be devised by which, wherever there is a guides' bureau, there might also be a guides' savings bank, and a bonus from the Guides' Fund be given in proportion to each guide's deposit on his death or retirement? Exceptional cases could always be specially dealt with.

The German Club is doing further good service to travellers by publishing, in a pocket form, scientific treatises on subjects connected with the Alps. No. 1 contains treatises on Orography, Hydrography, and Glaciers, by General Major Karl von Sonklar, and on Geology, by Professor Gumbel; No. 2, an Introduction to Alpine Meteorology, by Dr. J. Hann.

THE TRENTINE ANNUARIO.—The volume for 1878-9 contains interesting articles on Val Sugana and Val Fassa, a description of the mineral waters of the Trentino, of the 'ice-wells' of Vezzano, and of an excursion in Val di Fum. When shall we hear of an inn on the lovely Lake of Molveno?

ARIA DI MONTI, BY G. CORONA (Roma, 1880).—This little volume is from the pen of the Italian author, who in 'Picchi e Burroni,'* gave us a graphic account of his mountaineering exploits. The papers here collected have a more literary character. As to form, a foreign critic can

* *Alpine Journal*, vol. viii. p. 55.

hardly be a fair judge. Their substance is in great part lively and interesting.

The book commences with no less than three dedications. When these have been duly honoured we come to a curious chapter on the legends of Val Tournanche. The most striking legend is that of the 'Uomo selvatico,' a mysterious but friendly personage, who wanders on the High Alps, talking a strange tongue, picking flowers, and giving useful instruction as to their dairies to the primitive herdsmen. Legends of a similar nature as to the 'salvan' or savage man exist in other parts of the Italian Alps. Here they may, perhaps, have got mixed up with the recollection of some Swiss herbalist of the Middle Ages, who crossed the chain in quest of rare medicinal plants. Some of the statements in this chapter, e.g. as to the old name Pro-borno (*sic*), its derivation, the tunnel under the St. Théodule, and the pass having been in historical times free from glacier, must not be taken too seriously. Zermatt was called Prato Borno or Praborne, as St. Niklaus was Chauson, before the German element predominated in the W. Vispthal. The meaning of Pra is obvious.

We have not space to follow Signor Corona in his various dissertations on Alpine flowers, smugglers, and kindred topics. Nor can we return with him to the Matterhorn, except to note what he tells us of Luc Meynet, the humpback of Breil, sympathetically portrayed by Mr. Whympier. Readers of 'Scrambles in the Alps' will learn with pleasure that, in company with Signor Corona, Meynet reached the 'grand sommet' of the Matterhorn. This is the account given of his behaviour. 'Et Luc qui disait qu'il entendait rire les anges, et était complètement fou de joie, et qui exclamait : "Oh, à présent je peux mourir content." Et il voulait écrire à M. Whympier qu'il était arrivé, lui aussi, au grand sommet.'

If Meynet was made happy by visions of the heavenly host, Signor Corona, on the other hand, casts a cruel suspicion on the guardian angel who, on Mr. Whympier's authority, we believed to sit up aloft to look after climbers. The pinnacle distinguished as 'L'ange Anbé' ('Scrambles,' p. 133; 'Matterhorn,' p. 90) must, we fear, be identified with the passage known to Signor Corona's guides as the Stride, or 'L'Enjambée!'

MONT BLANC: ITALIAN ODE TRANSLATED INTO ENGLISH VERSE (Florence, 1879).—Count Cambray Digny, an Italian 'Alpinist' has recorded his ascent of Mont Blanc in an ode, and Signor S. Venzi has translated it into English, and dedicated it to the Alpine Club. The ode is original and spirited, particularly in a passage in which the tourists in the valleys are compared to the 'thousands of loathsome forms that wander and creep in the low depths of waters that sleep.' The translator has evidently done his best.

GUIDA ALLE ALPI COZZE (Pinerolo, 1879).—The indefatigable Mr. Budden has translated the sections of the 'Alpine Guide' referring to the Monte Viso and Vaudois districts, and two local authors have added to them valuable notes, and an appendix. A fair map accompanies the volume.

THE CARNIC ALPS.—Prof. G. Marinelli, President of the Tolmezzo

section of the Italian Alpine Club, has published a second series of his 'Materiali per l'Altimetria Italiana,' and also a pamphlet 'Le prime Alpiniste sulla vetta del Monte Canino.' He considers this summit, and not the Prestelenich, the highest of the group. The present writer himself some years ago endeavoured to attract attention to this group,* which has also been well described in the 'Alpine Guide.' It is now on a direct railway from Vienna to Venice, and should therefore be more visited. Travellers halting at Udine, will find in the 'Istituto Technico' a reading-room supplied with works of local interest, for the use of members of Alpine Clubs.

SOUVENIR DE ZERMATT (Zurich, 1879).—Under this title Messrs. Würster publish a series of views of the mountains that surround Zermatt, and of Mons. Seiler's hotels, past, present and future. The panoramas are accurately drawn and well coloured. The final plate, however, is somewhat bewildering, and we felt, at first, like the man with Turner's sketch, in some doubt which way to hold it. It proved to be a representation of the Zermatt mountains, as they would appear from a balloon. Its accuracy may be accepted, since it has been drawn from a very fine relief model of the whole district, on a scale of 1:25000, executed by Herr Imfeld, a Swiss engineer, and exhibited last summer in the Hôtel de Zermatt. Copies of this fine work (which if not absolutely accurate on the Italian side, is probably the best of its kind yet executed), are on sale at the price of 40l.

PANORAMA OF THE RIGI (Zurich, 1879).—Messrs. Würster also send a panorama from the Rigi, over seven feet long, and admirably drawn and coloured. From its size it is fit only for domestic use. But it will, doubtless, be valued as a remembrance, by many tourists who have already seen the view; and it may prove welcome as a substitute for the reality to others, who, after the events of last summer, may fear to venture to a spot the inhabitants of which have shown themselves eminently hostile to strangers.

SWITZERLAND ILLUSTRATED.—Under this title Herr Berlepsch sends us a series of English handbooks to favourite districts, published at Zurich. As the publishers inform us within the cover—'They are richly illustrated, written in an interesting way by well-known authors, and the prize (*sic*) of each volume is certainly very cheap.'

This modest announcement is fully borne out. Indeed, the 'well-known authors' were perhaps scarcely aware how interesting their style would be to English readers. We quote two examples. In the Engadine, we are told, town-like villages, elegant hotels and lovely lakes 'contrast strangely with the stiff majestic sublimity of the granite Colosses of the glaciers and the bare proud lofty pyramids.' This is how the ascent of the Rigi is described. 'It is a singular sort of drive, feeling, as it were, one's way up and down with such an engine always below, i.e. at the end of the train, bespeaking a great deal more confidence than any express train in a plain country can do, raging on with its Bacchantic fury. Its pace is not faster than that of a robust man, fully aware of his strength.'

* *Alpine Journal*, vol. vi. p. 197.

PROCEEDINGS OF THE ALPINE CLUB.

December 17, 1879. Mr. C. E. MATHEWS, *President, in the chair.*

The following gentlemen were elected members of the Club:—Rev. W. S. Green, Mr. F. Hardcastle, Baron Max von Thielmann, Messrs. Heywood Smith, Howard Barrett, Rev. C. E. B. Watson, Messrs. W. G. Hutchinson, W. Pasteur, Rev. H. F. Tozer, and Mr. W. F. Donkin.

Messrs. H. Seymour Hoare and E. Hutton were elected members of the Committee in the place of Messrs. D. J. Abercromby and T. Mid-dlemore who retired by rotation. The President, Vice-Presidents, Hon. Secretary, and the other members of the Committee were re-elected.

The President announced that the following gentlemen had been nominated by the Committee Honorary Members of the Club:—M. Charles Durier, the author of 'Le Mont Blanc'; Herr Ivan von Tschudi, the editor of the 'Schweizerführer'; General Major Karl von Sonklar, Dr. Edmund Mojsisovics von Mojsvar, both well known for their contributions to the knowledge and cartography of the Eastern Alps; Signor Quintino Sella, the distinguished Italian mountaineer and examiner; and Signor C. Martino Baretta, late editor of the 'Bollettino' of the Italian Club, and the author of many valuable scientific works on the Graian Alps.

Dr. Mojsisovics has presented the Club with a copy of his important work, 'Die Dolomit-Riffe'; Dr. Baretta with a complete set of his Alpine publications; Mons. Durier with a copy of 'Le Mont Blanc.'

Mr. CHARLES PILKINGTON read a paper on 'An Ascent of the Grand Pic de la Meije without Guides.'

Messrs. COOLIDGE, FRESHFIELD, and MATHEWS joined in the discussion following the reading of the paper: on all sides Mr. Pilkington and his companions, Mr. F. Gardiner and Mr. L. Pilkington, were warmly congratulated on the success of their expedition.

On Dec. 18, 1879, the Annual Winter Dinner took place at Willis's Rooms. An unusually large and interesting collection of Alpine Paintings was brought together. In addition to the well-known Alpine artists, who were for the most part strongly represented, two new exhibitors, Mr. Compton and Mr. Alfred Williams, showed important works. The exhibition was thrown open during the afternoon to members and their friends.

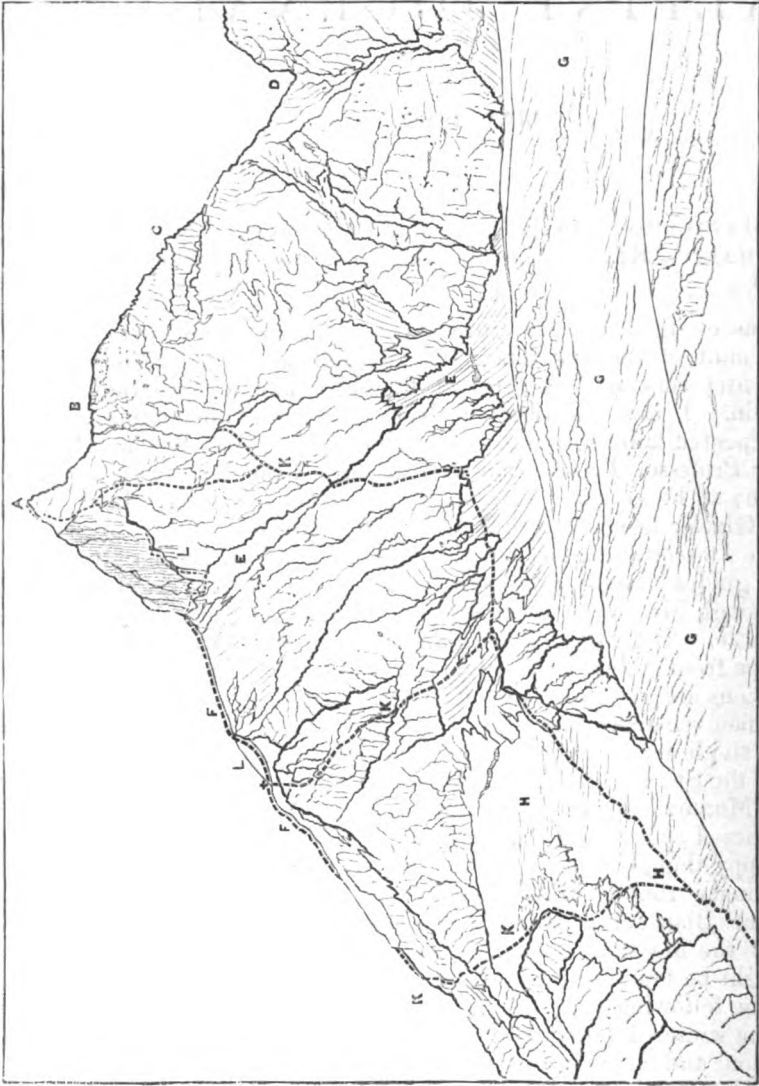
One hundred and forty-five members and guests sat down to dinner in the evening, the President, Mr. C. E. Mathews, in the chair.

Among the guests present were the Hon. Mr. Justice Stephen, Mr. J. A. Froude, Lieut.-Col. Lovett, C.S.I., Dr. J. W. Ogle, &c.

M. Loppé, in recognition of the assistance afforded him by the Club in the use of its rooms, has presented it with three oil paintings, representing the Märjelen See, the Aiguille du Dru, and the Matterhorn from the Riffe.

Mr. Alfred Williams has presented to the Club a large and fine water-colour drawing of the Grandes Jorasses.

Mr. Donkin, one of the newly elected members, has sent a collection of his Alpine photographs, probably the best as yet produced by an amateur photographer.



THE MATTERHORN FROM THE STOCKJE, WITH THE ROUTES OF MESSRS. MUMMERY AND PENHALL.

References—

- | | | |
|---|---------------------------------------|---------------------------------|
| A Summit of Matterhorn. | E Penhall's Great Conloit. | K K K Mr. Penhall's Routes. |
| B The Brenn Shoulder (<i>l'apauit</i>). | F The Zimut Ice Ridge. | L L Mr. Mummery's Route. |
| C 'The Great Tower.' | G G Part of the Tiefenmatten Glacier. | X Mr. Penhall's Sleeping Place. |
| D The Col du Linn. | H H Lateral Glacier. | |

THE
ALPINE JOURNAL.

MAY 1880.

THE MATTERHORN FROM THE ZMUTT GLACIER. By W. PENHALL. Read before the Alpine Club, February 3, 1880.

IT was on reading, some three years ago, Mr. Whymper's account of the Matterhorn in 'Scrambles in the Alps,' that I first conceived the idea of finding a new way up the mountain. I was surprised to learn that, notwithstanding their repeated failure on the Breil ridge, neither Mr. Whymper nor Professor Tyndall had ever attempted the north-western face; all he says is, 'The ghastly precipices which face the Zmutt Glacier forbade any attempt in that direction.'

Then I ascertained that in the first ascent from Breil the Italian guides actually got on to the upper part of this Zmutt face, though Mr. Grove gives a very unfavourable account of their route. Still his opinion was based on an inspection of the slope from above, and everybody knows what inaccurate impressions are got under such circumstances.

The fact remained that no one had given the Zmutt face or ridge a single trial. At that time, however, I had never been even to the Stockje, and my plans were of the vaguest possible kind. Moreover, when at Zermatt, later in the year, none of the guides I spoke to seemed to jump, as I had expected, at my 'happy thought,' and I contented myself with going up by the ordinary route. Later, however, when descending from the Dent Blanche, I carefully examined the north-western rocks of the Matterhorn, and the impression I got was that a way might be found. I consequently decided to make an attempt the following year.

In the winter I found Mr. Conway was bent on the same expedition, and we accordingly engaged Ferdinand Imseng for the month of August, 1878. Our programme was a most ambitious one, including, besides the Matterhorn, new routes for the Weisshorn, Rothhorn, and Dom.

Before trying the first of these we considered four or five days of uninterrupted fine weather indispensable, and as they never came we left Zermatt, having again only looked at the Matterhorn. I was delighted, however, to find that Imseng was really very anxious to see what could be done, though he would not venture an opinion as to the probable result.

Last year I was unable to get away so soon as I should have liked, and I anxiously read the letters I had from Imseng about once a week during the summer, each telling me in wonderful German that the Matterhorn had not been done, though he generally hinted someone was on the point of starting, and that I had better be quick. At last he wrote to say he had been up the Weisshorn, from Zinal, and that the gentleman he accompanied in that expedition was about to turn his attention to the Stockje.

I hurried at once to Zermatt, where I arrived on Friday, August 29, when I found Imseng was assisting at a festive entertainment under the Riffelhorn. I saw him in the evening, and he was in most exuberant spirits, the cause of which was soon explained, he had just concluded a most enjoyable day by winning thirty francs at a sort of bottle-breaking pool, which formed the closing feature of the banquet.

Then we discussed our plans, and decided that if the weather kept fine we would make an early start the following Monday morning so as to give time for examining the face, and then sleeping out as high as possible we would try and reach the summit on the Tuesday.

Louis Zurbrücken, of Macugnaga, with whom Imseng has done a good deal of chamois hunting, was engaged as second guide. The next day I went for a training walk up Castor, with Zurbrücken, and from what I could make out of his guiding qualities, I felt very glad I had secured him.

On Monday, September 1, we got up at 2.30 to find the valley full of clouds, but not wishing to throw away the slightest chance, we set off half an hour later with a porter carrying blankets, and walked somewhat despondently up through the pine forests, looking in vain for a single star to encourage us. Presently Imseng reminded me that the evening before I had said there was no need to tell the other guides where we were going, as our first attempt was so likely to come to nothing. 'Well,' he said, 'we did as you told us, but unfortunately we did not all say the same.' Then I found they had construed what I said into directions to deceive, so one had given out we were going to Zinal, another that the Dent d'Hérens was our destination, while the porter

had still further drawn on his imagination and explained quite proudly that he had mentioned to several of his friends that we were going chamois hunting, but where he did not know exactly. He seemed to think his fabrication very ingenious because it happened to be the 1st of September, and the absence of rifles or any offensive weapons a perfectly unimportant detail.

We agreed that after all this preamble something must be done, and we pushed on; but when we came to the highest châteaux the weather looked so very unpromising that we devoutly wished ourselves back in bed, and we all crawled into a hay barn and went to sleep. On looking out at 7.30 I found the Matterhorn was nearly free from clouds, though all the other mountains were still covered; we thought the wind had changed a little, and we started once more. Hitherto we had formed no plan as to our exact route, and when we got nearly opposite the Stockje we waited and consulted. I wanted to go much further up the glacier and try the middle of the face. Imseng's only objection to this was that if we went that way probably we should find no suitable place to pass the night, while on the arête we should.

This seemed reasonable, so I gave in, and we turned up a rather steep slope of hard snow on our left; after three-quarters of an hour we reached some rocks which brought us to the arête, about 1,500 feet above the glacier. The rocks of the arête were climbed without difficulty, and above them after half an hour of snow we came to hard ice, up which we had to cut steps for 2 hrs., until in fact we reached the first of the rocky teeth visible from Zermatt.

Here we left our knapsacks and the porter, and passed the first and second teeth without difficulty, the third was more troublesome, and then we saw we should have to leave the arête and go to the left or Zermatt side, over a very objectionable looking slope of loose rocks, with some ice and snow at intervals. It was a place of no extraordinary difficulty, but as the slightest slip would probably have landed the whole party somewhere in the neighbourhood of the Matterhorn Glacier, we thought it unwise to attempt to pass it so late in the day, when the sun had been on it for several hours. We decided, therefore, to go no further that day, and turned our attention to the rest of the route. So far as we could see it would be necessary to leave the arête again, higher up, and then go to the right of it, and one thing we did not like was that a great many stones fell from that region, and then swept down a curious curved gully into the great couloir which

descends from below the teeth where we were standing, obliquely across the face to the head of the Tiefenmatten Glacier. The central part of the face seemed freer from falling stones.

However we reasoned that by keeping as far as possible on the arête we should not long be exposed to falling stones, especially as we should be up there in the early morning. We could find no slab of rock large enough for us all to sit down upon, so we had reluctantly to retrace our steps down the ice slope to a patch of rocks where we could pass the night, and we calculated that having good steps ready made we should be able to reach the teeth again in little more than half an hour.

The sunset was one of the most perfect I have ever seen in the Alps, not a single cloud was visible, not a breath of wind stirring.

The panorama round the great glacier below us was magnificent, but all our attention was centred on one object in it, and straining my eyes at the gaunt slopes above, I fancied, as the light failed, I could make out not one, but half-a-dozen possible routes. The guides were most confident, saying that, with such weather, it must succeed. So after an excellent repast we spread out the blankets and tried to compose ourselves for the night.

The place was only prospectively a suitable one, the rock was far from flat, and after the sun had set we found half an hour's rest quite as much as we could endure at a time, so we got up and tramped backwards and forwards over a very limited exercise ground, and then lay down to shiver again.

About 10 P.M. we felt distinctly there was a wind, and soon we agreed it was rather strong and more than rather cold. Imseng, always hopeful as to the weather, said the wind invariably rose about that time, and it would subside before sunrise. I had never before heard that such was the case, but the sky was so clear I hoped he might be right, still, how we should have got through that night I don't know but that we had a small spirit lamp on the Russian principle which would just boil a soldier's mess tin. Zurbrücken and the porter held a blanket to keep off the wind, and Imseng and I cooked. First we made chocolate till that was all gone, then we went in for mulled wine. The third brew of this exhausted the spirit, and being once more unoccupied our attention returned to the weather. The moon first surrounded itself with a broad bright band, and shortly disappeared, then the stars over the Tiefenmatten Joch were obscured, and though the hour of

sunrise was approaching, the wind increased instead of abating. It seemed madness to think of going up, and stop still we could not.

When it was light a few flakes of snow fell, and, expecting a storm, we began the descent at once. We did not take the same route as in going up, but left the arête immediately, and traversed the rocks obliquely, so as to get a better view of the central part of the face. After we had examined it pretty carefully for about ten minutes a mist formed and concealed it entirely, so we continued the descent, and left the rocks at a point which appears almost immediately under the summit when viewed from the Stockje. We skirted under the rocks, and finally reached the Zmutt Glacier by the same snow slope up which we had gone the day before.

We glanced up from time to time only to see the upper part of the mountain entirely covered with watery clouds.

As we went down we met Mr. Mummery coming up with Alexander Burgener. We thought for a moment of going to the Stockje and waiting for a time in the hope we might be able to get up the next day. The weather had, however, so thoroughly disgusted us, that we went on. Mummery was wiser and waited. Leaving the guides on the highest grass slopes I ran down to Zermatt; soon after I got there I began to think I had the best of it, for a few drops of rain fell and the wind came in gusts, banging the shutters about and raising a cloud of dust. Yet the storm did not burst, but seemed to think better of it, and passed off. About 6 o'clock Imseng came up to me and said very seriously that Zurbrücken had just been to consult the priest, and the opinion of that worthy was that it would be fine the following day, and—would I like to start again after table-d'hôte? I confess I should hardly have proposed it myself, but as he suggested it I agreed, and after several delays, owing to the provisions, the guides' supper, &c., we found ourselves at 10 o'clock once more trudging up the too familiar path; we were all half asleep, and the events of the two previous days seemed like a dream. When we were above the pine forests some rhododendron bushes looked very inviting, and we called a halt for 10 min.; we lengthened it into 20, and then went on. After reaching the glacier we took exactly the same route as in descending the day before, and at 3.30 we were close to the place where we had to take to the rocks. Here we waited 1 hr., and had breakfast, the spirit lamp being again brought into requisition.

The first few steps after getting on to the rocks were diffi-

cult, and probably a better place might be found higher up; afterwards we climbed on cautiously, as at places the rocks were loose; we kept well to the right where, although steeper, they became firm, and in 1 hr. and 5 min. we were at the side of the couloir. We found the point where we came upon it unfavourable for crossing, and accordingly went up parallel to it for 20 min., to a place where it is very narrow, and then a dozen steps in the snow took us across in less than 5 min. The character of the rocks changed at once, they were no longer loose, but smooth and much steeper, at the same time offering enough small cracks to make climbing quite safe and agreeable. We kept in the middle of a wide ridge ending almost precipitously, and as we went on more care was necessary, owing to the increasing steepness. I had my axe attached round my wrist by a thick piece of cord, and had paid no attention to the fastening for some time, when suddenly it snapped, leaving the loop still on and in about six leaps the axe was in the couloir below. Though I regretted extremely the loss of an old friend closely connected with all my previous climbs, I believe I got on better without it. Thinking such would be the case, Imseng suggested I might carry a little more, and while we were making a fresh disposition of the knapsacks, we noticed Mummery on the arête just at the highest point we had reached two days before.

About 1½ hrs. from the point where we crossed the couloir we found ourselves standing on a narrow ledge of rock just below a small precipice which there was no possibility of ascending. Although we were conscious that every minute was of the utmost value, we were here compelled to call a halt in order to decide upon the direction of our further advance.

This was the point we had observed carefully during our descent on the previous day. From the position we then occupied we were only able to command a view of the precipice itself, and of the rocks on its left; we had remarked the impossibility of ascending the former, and the latter had struck us as of an exceedingly forbidding nature, both on account of their seeming steepness and smoothness. We had determined that the best way would probably lie round the rocks on the right, which I have said we were unable to see. From the ledge where we now stood we were able to examine the latter with precision. The rocks were of a most unattractive nature. They combined in themselves all the qualities which are most hateful in rocks: they were very steep, they were very smooth, in texture they were hard, and they were of that dark colour which many of us associate with the most difficult bits of

climbing we have come across. We could not see to what they led, or what would be the nature of the climbing above them. We felt that certainty of success here would not be assured, and turned to examine the alternative route.

Here we were met by long slopes of smooth rocks, rising one above another in apparently endless succession. Our choice then lay between this and the short piece of bad rock followed by—we knew not what.

We could not afford to hesitate for long, and we at once commenced to tackle the latter, led on by the delusive hope of finding an easier way when the corner was turned.

For the first few yards the difficulties we had to surmount were of no great moment, but every step we took was the parent of more abominable offspring; the ledges and cracks which alone gave a trifling foothold, became every moment fewer and smaller, and as a natural consequence our rate of advance, slow enough at first, became scarcely perceptible. After $\frac{3}{4}$ hr. of this kind of work we found ourselves a hundred feet from where we started, the precipice still unsurmounted, the patch of snow which we knew lay above it still far out of reach, and further progress absolutely impossible. We descended a few feet to a perilously small ledge, where we waited, conversing rather with blank looks than audible words.

Happily there was now no doubt as to what we had to do; the only course clearly was to descend once more to the foot of the precipice. It was easy enough to come to this decision, but to carry it into effect was a matter of no small difficulty.

Any attempt to describe the events of the hour which followed would be pure waste of time. Many of my readers must have been in similar positions, and their memories will assist them in picturing to themselves what language is unable to convey. By those who do not know what slopes of this kind are like, any endeavour to give an idea of our position would be at once dismissed as incredible.

For 1 hr. and 5 min. we were forced to descend with the utmost care, each being obliged to devote his whole attention to himself and give up all idea of assisting his companions.

At last we found ourselves once more on the ledge we had so unfortunately abandoned, with considerable increase of fatigue, considerable diminution of flesh at the ends of our fingers, and two hours of valuable time lost.

We again waited a few minutes before trying the way to the left. On starting again we got on better than we had anticipated for the first half-hour, when suddenly we came upon

fresh and unexpected difficulty; the rocks were no longer wet, but covered with a thin coating of ice. They would not have been particularly easy under the best of circumstances, and with this additional complication they required the greatest caution. Fortunately this did not last long, and we were soon standing on a narrow strip of snow that we had not noticed before. The appearance of the upper part of the mountain changes constantly, and from this point we were amazed at the size of the crags above us on our left, and I am still puzzled as to why they form no feature of the distant view.

One thing made us quite happy: the rest of our way was clear, there was nothing to prevent us from getting to the part of the face at which we knew the Italians must have traversed it in their first ascent. So on we went over the same sort of smooth rocks, of which we had already had so much, then passing another patch of snow we bore to the left, and on nearing the broad couloir which separated us from the arête, again struck straight up the face.

Presently Imseng pointed out a good place for crossing the couloir, where some rocks in the middle, almost overhanging, would give us protection if stones should fall. As luck would have it, some did fall just as we reached the spot mentioned, and we escaped them entirely; but as we watched them down the couloir up which we knew the other party had come, but an hour before, the guides began to institute a comparison between their way and our own.

The fact was, the sun had just reached the rocks above. A few rapid steps took us to the arête, and 2 min. afterwards we saw a rope attached to the top of a steep gully in the couloir. We regarded it with great curiosity and interest, feeling sure it had been there for fifteen years, but the next day we learned that Mummery's party had been up a little higher, and then finding it impossible to get on to the arête, had attached the rope in descending to this place.

Our work was practically over, so we proclaimed a halt, but though not sorry to sit down, we were restless to get really to the top, particularly when a shout from the shoulder told us the other party were rapidly descending, so after a few minutes we scrambled on, and in little more than $\frac{1}{2}$ hr., we were at the southern end of the final ridge—time 3 P.M.

It was not unpleasantly cold, so having considerably lightened the knapsacks and wine tin, we enjoyed the view for a good half hour, and then moved on to the true summit, and prepared to descend. The top, though from all accounts it changes its appearance rapidly, looked just the same as it did

in 1877, but soon after leaving it I noticed the mountain had made great progress in one respect: the number of ropes above the shoulder had been largely increased. In one place there were three ropes and a rusty chain all together. Now I think one of the hardest things one tries to do on a mountain is to help oneself with a rope; of course anybody can come down like a sailor, but my experience is that if I take the rope in one hand and try at the same time to hold on to the rocks, at one moment the rope is slack and I get my fingers on to a small projection; the next it is made tight from below, my hand is wrenched from the rocks, and there is nothing for it but to leave go altogether, or else trust to it entirely; another objection is that the permanent rope gets mixed up with the rope with which the party is attached. Now though I should like to see all such artificial aids removed from every mountain in the Alps, I have only referred to this subject to make one protest. I heard before leaving Zermatt that negotiations had already been opened with the Swiss Alpine Club, with a view to building a hut on the Zmutt ridge. If this is done, ropes at the bad places are sure to follow, and the way will soon be marked out by the same scatter of broken glass and sardine boxes which at present disgraces the northern route.

Let us try and keep one side of the Matterhorn at any rate for those who really admire the most wonderful mountain in the Alps, and who like to climb it for its own sake, and then we can give up the other arêtes to be decorated, if necessary, with chains and ladders from top to bottom, and so formed into the cockneys' high road from Breil to Zermatt!

From the shoulder we went down at a good pace so as to reach the glacier before it got dark; this was just accomplished, and then having finished up everything we had in the way of food, to excuse ourselves for not going on at once, we said to one another we would wait till the moon rose, after that we stumbled on over the glacier and down the most abominable short cuts, finally reaching Zermatt at 9.45.

Refusing to answer any questions till the following morning we went off to bed, and I confess for my own part I could scarcely keep awake while I undressed. This was hardly to be wondered at. We had had two hours' sleep on Sunday night; none on the arête on Monday night; we had walked all Tuesday night, and Wednesday of itself would have been a tiring day even if one had started fresh.

What a night's rest in the Alps will do is wonderful, but I was disgusted when, on looking out at 9 next morning, I saw my guides sitting on the wall as if they had been up hours. I

must now give them their due. Of Imseng it is almost superfluous to speak; he has been engaged in several of the most difficult expeditions that have been done of late years, and the only charge I have ever heard brought against him is that of rashness. Even this is, in my opinion, unfounded, for I know no guide who is quicker in detecting real danger when it exists, or in taking the best means to avoid it.

Zurbrücken is a younger man, and I had never before seen him on a hard mountain, but I am sure his activity, sureness of foot, and weight-carrying capabilities will soon give him an acknowledged position among the best guides of his district. If I might be allowed to read a moral from the expedition I have just tried to describe, I should say it goes to prove what has been pointed out before, that a rock face ought never to be condemned from mere inspection. Any competent mountaineer might, I believe, look at the Matterhorn from the Stockje and report the face perilously steep, and raked with falling stones; yet if he proceeded to climb it, he would find that up the middle of it there lies a way, quite as free from the danger of stones as many expeditions now frequently made.

The time we took will be very little guide to those who follow.

Let a good walker sleep at the Stockje and cross the glacier so as to be on the rocks soon after daybreak; in less than 5 hrs. he may reach the summit, and I feel confident he will look back to the climb as one of the most interesting in the Zermatt district.

Two routes having now been made up the Zmutt side, the question naturally arises which is the better? I will not attempt to answer this, but simply say, so far as my observation goes, Mr. Mummery's way is the longer, and though easier for the first 3 hrs., is exposed to greater danger from stones in the upper part; while the face affords more continuous difficulty and less real danger.

THE FIRST ASCENT OF THE MATTERHORN BY THE
ZMUTT ARÊTE. By A. F. MUMMERY.

ON September 2 Alexander Burgener and I left the Stockje about 5 P.M., and made for the outer or north-west corner of the great buttress on which rests the Matterhorn Glacier. We soon reached a small moraine, and, having ascended it for a short distance, took to the rocks behind. These gave us an

easy passage on to a large, stone-covered plateau, on the north edge of which, overlooking the Zmutt Glacier, we found a suitable hollow for our bivouac.

Soon after sunset my second man, Kentinetta, turned up. He had been sent back on our arrival that morning at the Stockje for an extra supply of provisions, and the best man he could find to help carry them, as, when we left Zermatt, our intention had been to watch Penhall, who was then on the mountain, and in the afternoon to cross the Col Durand. However, on reaching the glacier, we met him returning, and we at once determined to carry out our first plan of attempting the Zmutt arête.

Kentinetta brought Johann Petrus with him, a choice with which we had every reason to be satisfied.

We left our gîte at 4.15 the next morning, having spent a bitterly cold night. The great masses of clouds which, driven by a fierce south-west wind, had greatly discouraged us on the previous day, had all disappeared, and we had the promise of perfect weather. We crossed the plateau, keeping to the right, as the huge ice cliffs of the Matterhorn Glacier, looming through the dim twilight of the morning, forbid all approach in their direction. At 4.45 we reached the line of cliffs which rises above the Tiefenmatten Glacier, and at once began to climb them, bearing so much to the right that we did not top them till we gained the ledge of rocks just under the snow ridge. Here we made a short halt to put on the rope, and to hide away the blankets, which, thinking it doubtful whether we should be able to finish our climb in one day, we had brought with us to this point. Starting again at 5.50 we mounted the snow ridge by the aid of the steps left by Mr. Penhall's party, and in about 40 minutes reached the first of the rocky teeth. Petrus, who was leading, tried to turn it by a tempting ledge on the right, but was almost immediately forced back, and we were obliged to climb over the loose and ticklish mass of fragments of which it is composed. As we proceeded, the ridge became sharper and more rotten till, beyond the third tooth, we were pulled up by a deep cleft. Burgener and Petrus succeeded in climbing down the face on the right, and in getting into it. Further direct progress was, however, impossible, as the ridge rose smooth and perpendicular for some distance above them, and a huge rib, which supports this section of the arête, bulged out in front, and precluded all chance of traversing the face. Of itself this would not have stopped so determined a climber as Burgener, for a narrow gulley between this rib and the fangs of tooth No. 3 offered a fair hope of being able to

descend far enough to turn the obstruction; but further in front and to the left rose a slope with that unpleasant look which tells of a basis of rotten rock, glazed with ice, and masked with powdery snow; higher up the slope steepened till it appeared absolutely perpendicular. We knew we must climb this slope or give up the ascent, and, startled by its appearance, the men recoiled to the rocks on which Kentinetta and I were still posted.

It is, perhaps, hardly necessary to explain that the snowy part of the Zmutt arête does not, as at first glance from the Stockje it appears to do, abut against the north-west corner of the mountain, but, becoming too steep for snow to lie on its slopes, runs right across and in front of the face of the peak till, from this point of view, directly under the summit. Between this and the cliffs behind is an enormous chasm from 150 to 200 yards wide, its walls plunging with appalling steepness on to the Matterhorn Glacier, some 1,500 feet below. The wall opposite towers some 800 feet higher still, and the whole of its tremendous face is without crack or scar, and from top to bottom absolutely perpendicular. This chasm, after running into the heart of the mountain for some 400 yards beyond the first tooth, is ended by the cliff whose appearance was so objectionable. This cliff is formed by the wall-like ridge which to this point runs parallel to the cliffs behind, turning at right angles to the left, and abutting on to the face of the peak. We knew the arête would become impassable before reaching this bend, and our only hope of success lay in traversing and then ascending this wall, so as to gain the cross-ridge beyond this impracticable part.

For three-quarters of an hour Burgener examined this slope without being able to see a way across it, and unpleasant doubts were being expressed when a distant jodel attracted our attention, and, far away down the mountain, we spied three dots, whom we at once and rightly guessed to be Penhall and his guides. We watched them for half an hour, when they disappeared behind a projection of the mountain. Our consultation was then renewed with great energy, and it was ultimately decided that we should pass the gap and examine the slope more nearly. We scrambled into the gap. Burgener and Petrus then descended the gully, and soon found a way on to the face. On reaching this point a few minutes later I found Burgener and Petrus already working upwards, and in a very short time we were again on the arête. After following it a short distance we renewed our discussion on the doubtful slope, which was now close to us. Burgener was somewhat averse to attempting

it, but, as there was obviously no other way, Petrus went forward to explore.

Our halts at this point and on the third tooth had already exceeded two hours, and we had no time to lose, so, as Petrus seemed to be getting on all right, Burgener began to traverse the slope, telling me to pay out the rope till he should be 'ganz fest.' I paid out 100 feet, and, as there seemed to be no immediate prospect of his being 'ganz fest,' and as, moreover, in the event of a slip it was tolerably certain that it would not make much difference whether he were or no, I cautiously followed his track. After having traversed the slope for about 60 yards, we turned straight up, and soon reached firm rock, which, though extremely steep, offered good hold and plenty of it. Burgener dashed up at a furious pace. Suddenly a splinter of rock catches his coat, and an agonised yell tells us that his pipe, his faithful companion in many a climb, and the gift of his most trusted Monsieur, has been jerked out of his pocket, and has plunged down on to the Matterhorn Glacier.

Soon afterwards we gained the cross-ridge, and, without halting, rushed up it to the point where it abuts upon the face of the peak. The remainder of our route was before us, and, after a moment's anxious gaze, Burgener gripped my hand, and with victory in his face, said, 'The pipe is avenged: we are on the summit,' which I took to mean that we should be there some time.

The men at once began the construction of a fine cairn, whilst I made a diligent search in the knapsacks for one of Mons. Seiler's pocket editions of a chicken, and subsequently prepared a bottle for the due reception of our names. These duties being performed, and Burgener having borrowed Kentinetta's pipe, which, by the by, he did not return till we got to Zermatt, we began to climb the west face, bearing well to the right to get out of the track of stones, which, as the sun had touched the rocks, fell quite frequently enough to prevent loitering. After some steady climbing we reached a point from which it appeared possible to work on to the Zmutt arête, but Burgener was somewhat doubtful, and on my telling him that Carrel had traversed this slope by a 'corridor' higher up, he preferred to take that course.

We soon gained the ledge, and found no difficulty in following it to the fault which bars access to the ridge. Petrus was promptly swung over the gully, to see if the last man could get down unaided. This being pronounced impossible, our second rope was got out. A good deal of time was spent before it could be fixed, the only available knob of rock being too round to admit of its being easily attached. Meanwhile I had

time to look along the ledge which winds like a pathway round all the inequalities of the mountain to the southern arête. It appeared to be quite free from snow and ice, and would not, I fancy, have offered any very serious obstacle to our traversing it. I also came upon a deeply-rusted hook driven into the rock, a relic, I suppose, of Mr. Grove's ascent in 1867.

Having slid down the rope we soon found that the remainder of the ledge was very different from that above; instead of offering firm foothold on the rock, it was now loaded with incoherent snow, and the few knobs of rock which protruded through this were glazed with ice, and, for the most part, rotten. It was, however, of no great extent, and we were soon able to plunge through deep snow on to the ridge. Petrus, who had been more or less erratic in his movements all day, had disappeared. We followed his traces, occasionally on the arête, but more often on the steep slope to the north of it, and in $\frac{3}{4}$ hr., or at 1.45 P.M. found him on the summit.

The day was perfectly calm and the view cloudless. Time fled swiftly, and when Burgener came up to me with the rope at 2.30, I could hardly believe we had been $\frac{3}{4}$ hour on the summit.

Then we descended the chain-clad north-east arête; halted a few minutes on the elbow to watch Penhall's party, who had just come in sight on the Zmutt arête, and with a parting jodel plunged down the slopes to the cabane, great care, however, being required to avoid the broken glass and sardine boxes which have here accumulated in large quantities. After a short halt we ran down to the glacier; took the glacier route and soon arrived at the 'roches moutonnées.' These, I believe, it is usual to turn by a reascent over loose stones to the left. Burgener, however, knowing my great dislike to loose stones, peered over the rocks, and soon found a practicable line a little to the right. We descended this, and, after a short glistade, reached the level Furgen Glacier. It was just 5.30 as we unbuckled our gaiters on the moraine under the Hörnli, and $1\frac{1}{2}$ hr. later we tramped down the high street of Zermatt, and were soon enjoying the rewards of the faithful.

AN ASCENT OF MOUNT ARGÆUS. By the Rev.
H. F. TOZER.

SEVERAL years ago, in studying the south-eastern portion of the map of Asia Minor, I became interested in one of those groups of fine wavy lines, gathered up to a dark head,

which signify a lofty solitary mountain. This was Mount Argæus. I also made myself acquainted with its general appearance from the views that had been published of it, taken from different points, by Hamilton in his 'Researches in Asia Minor,' and Texier in his 'Asie Mineure.' On all grounds it seemed a very attractive mountain, and I promised myself that, if I ever made my way into that country, I would attempt to ascend it. My design was long delayed, partly owing to the terrible famine which desolated that district in 1874, and partly on account of the Russo-Turkish war, and other causes. At last, in the summer of 1879, the severe quarantines which were established in the West against the Black Sea having been removed, there seemed to be a favourable opportunity of penetrating into Asia Minor and Armenia, and accordingly I left England on July 3, bound in the first instance for Constantinople, by way of Marseilles, in the company of my friend, Mr. T. M. Crowder, with whom it had been my good fortune to make four previous journeys in the interior of Greece and European Turkey, and to ascend many of the peaks in the neighbourhood of the Ægean. We reached that place on July 11, and were thus able to complete our final preparations for our journey before the departure of the corresponding French steamer for the ports on the south coast of the Black Sea. On July 16 we landed at Samsoun, the most important town between Sinope and Trebizond, and the next day started on horseback for Anasia, which place lay three days' journey towards the south. After visiting the famous rock-hewn tombs of the Kings of Pontus in the neighbourhood of that city, we proceeded to the large and central town of Yeuzgatt, further in the interior, taking on our way the extraordinary semi-Assyrian buildings and bas-reliefs, the remains of which may be seen near the villages of Euyuk and Boghaz-Keui, within the borders of what in ancient times was the district of Galatia. At Yeuzgatt commenced the last stage of our journey towards Argæus, our immediate destination being the city of Kaiserieh, which lies at its foot on the north-eastern side.

It was in the afternoon of the eleventh day from our leaving Samsoun that the mountain first came in view. We were riding along a tract of undulating ground, which having been parched by the heat and drought of several successive months—for this summer, in contrast to the wet and cold which had prevailed in England, was said everywhere in Asia Minor to have been the hottest that had been known within the memory of man—resembled almost a steppe in its bareness and mono-

tony. Suddenly, in crossing some low hills, I caught sight of a very distant peak, which was appearing above the horizon almost due south of us, with a large mass of snow on one side. I pointed it out to my companion, and exclaimed—‘Surely that can be nothing but Argæus.’ One of our Turkish guards, overhearing this, cried ‘Erjâus! Erjâus! that is it!’ So closely has the ancient form been retained at the present day! We heard the name constantly afterwards in the mouths both of Turks and Armenians, and it always took this form. Gradually, as the mountain rose, a second and lower peak appeared to the right of the former one; both were beautifully cut, and a large snow-bed lay in the hollow between them. When at last the whole was revealed, it reminded both of us of the peak of Mount Athos as seen from its eastern side. We knew it to be a volcano, and yet it had none of the rounded forms that such mountains usually have, but showed the sharp and pointed outline of an Alp. It was here more than fifty miles distant in a direct line.

A day later we were approaching the Halys, the largest river in Asia Minor, which rises near the north-eastern frontier of the country, then describes a vast arc towards the south, and afterwards bending northwards again, flows into the sea between Sinope and Samsoun. The road from Yeuzgatt to Kaiserieh cuts this arc about the middle of its course. As we descended from a low pass, our way led through a rough and stony defile, and when this opened out, the rocks, from being of a clayey nature before, became basaltic, showing us that we were approaching a volcanic region. For some time we had seen before us a sort of deep cut in the nearer mountains with cliffs of basalt on the further side of it, and at last a turn of the road brought us in sight of the river, which runs through it. The stream is here spanned by a highly picturesque bridge of fifteen round arches of various sizes, rising irregularly towards the middle, from which it obtains its name of Tchok Gheuz Kiuprisi, or the ‘Bridge of the Numerous Eyes.’ The width of the stream may be somewhat over 100 feet, but both the length of the bridge and the immense bed of shingle along its right bank give evidence of the size to which it is swollen in winter. After pitching our tent in the shingle we proceeded to bathe, and in doing so soon discovered why the Turks have given the Halys the name of the Red River (Kizil Irmak), for the water was filled with a thick red deposit, and the mud at the sides was of a most adhesive nature. This accounts for the formation of the great delta at its mouth, which we had seen from the sea between Sinope and Samsoun.

The next morning we commenced our last day's journey to Kaiserieh. Our road lay over dusty volcanic hills, where the heat appeared to us greater than on any previous day; but this was no matter for surprise, for besides the cindery nature of the soil, and its being still the height of summer, we had journeyed far to the south, being now between half and two-thirds of the distance from the Black Sea to the Mediterranean. At length we began to ascend somewhat rapidly, and after a brief halt under some fruit trees near a hamlet in a sequestered upland valley, we reached the brow of a high hill from which Kaiserieh was visible. At our feet lay an extensive plain, perfectly level and light-brown in colour, and at the further end of this, about eight miles off, at the edge of the lowest spurs of Argæus, appeared what looked like a dark carpet outspread upon it—for we could hardly believe it to be a city, since neither minarets, nor trees, nor other individual objects could yet be distinguished. Argæus itself, which we now saw for the first time in its full proportions from base to summit, was a most imposing object, with its successive peaks, the snow-fields beneath them, and the numerous volcanic cones about its flanks and base. From the brow we descended by a steep path, having on our left the large Armenian village of Erkilet, the houses of which climb up an abrupt hillside, while its plantations and vineyards extend below in a long sweep of green. It took us still $1\frac{1}{2}$ hr. to ride across the plain, which is covered with volcanic stones and powder, and exactly corresponds to what Strabo describes it to have been in his time; he adds that it was unproductive and uncultivated.*

I will not stop to describe the city of Kaiserieh, the ancient Cæsareia, but will proceed at once to Argæus. We started early in the morning of the last day of July for the village of Èverek on the southern side of the mountain, that being generally considered the most favourable point of attack. Our way lay over a shoulder of Argæus, but before we reached its outliers it was necessary to ride for nearly an hour over the dusty plain, where we met numerous men of all classes mounted on donkeys, on their way to the bazaars; for during the summer the merchants of Kaiserieh, great and small, when the business of the day is over, retire from the city to their cottages, with which the hillsides are studded. We passed the double cone of the lofty Ali Dagh on our left, and then commenced a steep ascent over lava and basalt, until we reached a plateau of

* Strabo, p. 538.

no great width, covered with gardens, vineyards, and plantations. Among these lay some of the humble summer retreats. Again we mount, and again we find a similar level, bright like the former one with artificial vegetation. From this point, looking back, the eye ranges over a number of craters that stand about the base or on the flanks of the mountain, beyond which Kaiserieh appears, outspread upon the level ground. Then follows another long ascent overlooking a rocky valley, until after four hours an extensive stony upland appears, between 6,000 and 7,000 feet above the sea, the dreariness of which is only relieved in places by a clear trout stream which hurries through it. From this point the snow-fields on the eastern side of Argæus are finely seen; but as I looked at them, misgivings about our ascent began to creep into my mind, for whereas the mountain had been cloudless up to this time ever since we first saw it, now wreaths of vapour began to gather about the summits, and other clouds were drifting up from the south, as if portending a change of weather. I could not help fearing a fate similar to that Hamilton experienced, who after a fortnight of clear sky saw similar clouds appear as he started for the ascent, and was enveloped in mist and drizzling rain before he reached the top.

Here we found a *yaila*, or summer encampment of Turkish shepherds, whose flocks were cropping the scanty herbage. The covering of their tents was black, but the sides were composed of common brown cloth. They brought out carpets and bedding for us to rest on, and we found them clean; the fact of their possessing them was a sufficient evidence that they were not poor. After a pleasant *siesta* at this spot we proceeded to the top of the pass, and as we descended on the other side caught sight of other craters still more definitely marked, which from their shape and number carried our thoughts back to the volcanic region of Auvergne. Beyond these, as we looked through a fold in the nearer hills, appeared a lake that occupied the centre of a plain, and on the further side of it a succession of mountain chains. The descent to Everek was long and wearisome, all the more so because we knew that the further we went the hotter our resting-place would be, and the greater the distance that would separate us from the higher parts of Argæus. We ultimately found that that place is only a few hundred feet higher than Kaiserieh, and being situated on the southern side of the mountain would naturally be hotter, were it not for the abundant vegetation in the midst of which it lies. The source of all this freshness is found in a copious spring of limpid water—almost a small river at its birth—which wells

out into an extensive stone basin or reservoir at the entrance of the village. In this the boys of Everek are fond of bathing, so that, as the water supply of the place comes from here, the natives have the unusual arrangement of washing in the water first and drinking it afterwards. The stream, however, is divided into numerous channels, and consequently, as you look down from above, the plain in this part seems to be inundated with a sea of verdure.

Our first care on reaching Everek was to inquire about a guide for Argæus, and we found the general opinion to be that an Armenian named Stephan knew more about the mountain than anyone else; he was reputed to have made the ascent several times. When he had been fetched, he proved to be an old man, and though he appeared still vigorous, we felt somewhat doubtful whether he would reach the summit. However, we engaged him, and he presented himself in readiness about noon on the following day, which was the time we had fixed for starting. Our company, who were all mounted, consisted of our two selves and this guide, our servant, one of the guards who had accompanied us from Kaiserieh, and two men to whom our horses belonged. A baggage horse carried our tent, our camp beds, and some provisions. When we reached the open country the view of the mountain was very striking, for its peaks look sharper from here than they do from the northern side, though there is less snow upon them. The clouds which had caused me misgivings the day before had now dispersed, and all the summits were perfectly clear. Our course lay towards the north, and after retracing our steps along the plain by the same road by which we had approached Everek, we began to ascend between some of the lower craters, first gradually, and then more steeply, in the direction of the highest peak. After two hours we arrived at a copious spring which gushes out into a trough, and as this was the last water we should meet with on the mountain we gave our horses a long drink and took a supply for ourselves. We then continued to mount until the slopes became so steep that we wondered how our baggage horse could manage to struggle up them, and after two hours from the spring halted on the mountain side at a height of between eight and nine thousand feet above the sea. Here we determined to pass the night, for the rocks afforded shelter for our attendants, and the dry stems of the dwarf juniper, large patches of which covered the ground, provided fuel to make a fire. While I was wandering about amongst these I put up a fine hare. There are no forest trees now on Argæus, though Strabo speaks of

extensive groves as covering its sides in his time, thus forming a contrast to the bareness of the rest of Cappadocia.

We pitched our tent, and then put together the alpenstock and ice-axe, both of which we had brought from England in two pieces; the alpenstock having been cut in two and arranged with brass ferules in the middle, and a screw within to hold the two parts together; the ice-axe having a moveable head, which was secured by a steel screw passing through both it and the metal-work at the top of the pole. This, no doubt, was not as strong as if it had been in one piece, but it would have required a very unusual strain to break it. The usefulness—I might almost say necessity—of these contrivances will be obvious to anyone who is accustomed to Eastern travel, for a pole of any length, or a crooked object like an axe, is almost certain to be broken when packed on a baggage horse, either from a collision with another laden animal, or from striking against a rock by the roadside, or finally from one of those capsizees of the luggage which periodically happen. It was only by constant watchfulness that even our short implements were preserved intact, for the postilions and muleteers, if left to themselves, would always fasten them on the outside of the baggage, where a crash was only a question of time. As to provisions—we determined to take as little as possible, for our old guide could not be expected to carry anything. We therefore contented ourselves with a piece of meat and some bread each, and a small flask of brandy; this, together with the aneroid and a map and compass, formed the whole of our equipment.

The next morning (August 2) we were off—that is, Mr. Crowder, Stephan, and myself—at 2 A.M., after a cup of hot coffee, which was welcome, for the thermometer had gone down to 25°. By good luck the moon was at the full, for without her brilliant light it would have been impossible to commence the ascent by night, owing to the extreme roughness of the mountain sides. Thus illuminated, the wild solitudes in front of us, the lower craters and the indistinct expanse of plain and mountains beyond, formed a very impressive scene. In the plain the lake, which we had seen in descending the pass from Kaiserieh, was visible. Our guide set off at much too fast a pace, which we in vain endeavoured to check, and the natural result was that he had to rest frequently, and showed signs of fatigue when we reached the steeper ground. Our way lay up a gully, which comes down from the higher peaks, and may at one time in its upper part have formed a portion of a crater. After two hours of

moderately rapid ascent we reached the first patch of snow, and here began a climb of 1,600 feet, which occupied two hours more, and was as hard a piece of work as either of us had ever experienced; for the angle was extremely steep, and the face of the mountain was covered with loose stones, and masses of fallen rock equally untrustworthy to the foot. When we were in the middle of this climb the first rays of the sun fell on the porphyry rocks above us, and produced a splendid effect by turning them to a bright crimson. After a time we took to the rocks at the side of this talus, thinking to find a firmer footing on them; but these were of such a friable nature that they gave way even when grasped with the hand, so that it was a choice of evils between this and the screes we had left. In an ordinary season, so our guide afterwards told us, this gully would be half full of snow, but the great heat of last summer had caused it almost entirely to disappear. In this way we escaped the only real danger which attends this expedition—that, namely, arising from avalanches of stones caused by the melting of the snow in which they are embedded. Both Hamilton and Tchihatcheff, the two travellers who had ascended Argæus before us, and whose visits took place at the same time of year as our own—the one at the end of July, the other in the middle of August—speak of the risk arising from this cause. The latter of these two writers, whose account throughout is somewhat rhapsodical, speaks of daybreak being announced by detonations, followed by a hail of blocks of stone in all directions, and the more cautious Hamilton describes the stones at sunrise as ‘rushing past at a rapid rate, and making the ascent in some places a work of toil and hazard.’* In consequence of this, by the advice of his guides, he descended by a different route. As there was no snow here when we passed, we neither saw nor heard anything of these falling stones. It is clear also that Hamilton was mistaken in speaking of glaciers as existing here; there are none, in fact, on either side of the mountain.

At last, about 6 o'clock, we reached the ridge, where there is a long arête of snow, joining two sets of summits, at the head of a vast snow-slope on the north side, which forms a conspicuous object when seen from Kaiserieh. Our guide was now an hour or more behind, and as the cliffs on our left, away from the arête, were quite precipitous, we thought at first that we had reached the highest attainable point. However, we

* Tchihatcheff, ‘*Asie Mineure*,’ i. 445, 446; Hamilton, ‘*Researches in Asia Minor*,’ ii. 278.

discovered a way by which it was possible to scramble round the foot of these, cutting a few steps in the frozen snow, and thus reached a point some 200 feet higher, at the base of the final peak, which rises about 50 feet above, and seemed to us perpendicular and, from this side, wholly impracticable—if, indeed, at the present day anything can be pronounced impracticable. The view was quite clear and very extensive, including the long line of the Anti-Taurus to the east, the Allah Dagh and other mountains that run down towards Lycaonia to the south-west, and to the north the vast undulating plains of the interior, which we had crossed in coming from Yeuzgatt. One or two small lakes were visible, both that which we had seen at starting, and another towards the north-east, which we afterwards found to be covered with a salt incrustation; this circumstance would account for its being so clearly seen. We could also trace the depression in which the Halys runs, though the river itself was concealed. Kaiserieh lay below us, as it appeared when first we saw it, like a dark carpet spread upon the bare plain. But far the most remarkable feature was the mountain itself, for the lofty pinnacles of red porphyritic rock, rising from among the snows around and beneath us—veritable *aiguilles*—were as wonderful a sight as can well be conceived. The crater or craters which once occupied the summit are too much broken away to be easily traceable, the best marked being that which faces east; but below, all around the base of the mountain, is a belt of volcanic cones. The belief that prevailed among the ancients that on clear days both the Euxine and the Mediterranean were visible from the top* is wholly ungrounded, on account of the distance, and the height of the intervening mountains.

We remained $1\frac{1}{2}$ hr. on and about the summit, during which time we breakfasted and made some observations. Before this time had expired our old guide had made his way up to us, much to the credit of his pluck. The aneroid gave the elevation as 9,100 feet above Kaiserieh, and if we take 4,050 feet as our estimate of the height of that place, this will give a total of 13,150 feet as the height of Argæus above the sea—an estimate which nearly corresponds with that of Hamilton, who puts it at about 13,000 feet.† I was much

* Strabo, as above.

† Hamilton, ii. 279. The estimate of the height of Kaiserieh here given is derived from Col. Wilson, now British Consul-General at Sivas, who had acquired great experience in the measurement of heights on the Palestine survey. He told me that he had found the neighbour-

disappointed at the absence of flowers, but even at this altitude the great heat had left but few remaining, whereas Hamilton speaks of the ground as being enamelled with them even lower down than the spot where we had encamped. The flora of a lofty mountain in this position, on the confines of Europe and Asia, ought to be highly interesting. As we were scrambling about the rocks close to the top, we found, to our great surprise, that in places they were perforated with ancient human habitations. One of these wound inwards to a considerable depth, with rude niches hollowed in the sides. We knew already that Cappadocia was a land of rock-dwellings, but it seemed none the less strange that any should be met with here. Who was it that made for himself this aerial abode? Was it one of the primæval inhabitants? But in those days, when stores of food were scanty, what was the inducement for anyone to occupy so inhospitable a spot? Was it a goatherd who was accustomed to seek refuge here from stress of weather? But where was the herbage on these barren rocks which should tempt him to climb to such a height? And, besides, the labour required for such a work was not likely to have been expended by a casual visitor. Or was it a hermit? If so, he was a Stylite indeed, for he had elevated himself on the highest rocky column in the country. Anyhow, there was no question of their being artificial abodes, for, besides the niches, the marks of the chisel or some hard instrument were evident on the roof and sides.

Our descent was uneventful. At first we took a somewhat more direct course than that by which we had ascended, but afterwards we struck into our former route, and thus reached our encampment in rather over two hours. There we reposed agreeably for some time, and in the course of the afternoon returned to Everek.

It now remains to say a word about former ascents of this mountain. It seems to have been ascended even in ancient times, for Strabo mentions this, adding, at the same time, that few attempted it. Possibly this may have been connected, as

ing village of Talas, where he stayed, by careful observation, both with the aneroid and the mercurial barometer, to be 4,355 feet, and this cannot be more than 300 feet above the city. Tchihatcheff makes the height of Argæus 3,841 mètres, which would be some 500 feet lower than our measurement. Three weeks after our visit the mountain was again ascended by Captain Cooper, the newly-appointed British Vice-Consul, and Dr. Farnsworth, an American missionary. Captain Cooper found the elevation by the boiling-point a little way below the place where our measurement was taken to be 13,024 feet, and estimated the height of the summit at 13,100 feet.

was the case on high mountains in Greece, with some act of worship, for another author tells us that the summit was believed to be the abode of a god.* The first ascent in modern times may fairly be considered mythical. The story runs as follows:—‘A traveller once came from Frangistan in search of a rare plant which grew only on the summit of Argæus, having ten leaves round its stalk and a flower in the centre. Here it was said to be guarded by a watchful serpent, which only slept one hour out of the four-and-twenty. The traveller in vain tried to persuade some of the natives to accompany him and point out the way; none of them would venture, and at length he made the ascent alone. Failing, however, in his attempt to surprise the dragon, he was himself destroyed. The story adds that he was afterwards discovered, transformed into a book, which was taken to Cæsareia, and thence found its way back into Frangistan.’† Another attempt—if attempt it can be called—was historical, and, unfortunately, had a fatal ending. This was by an American missionary, who lies buried at Kaiserieh, where there are various versions of his story. The following account is given by the writer just quoted, though he says that even in his time it was difficult to ascertain the truth:—‘The unfortunate traveller ascended the mountain from Hissarjik, on the north side, not intending or expecting to reach the top; but on reaching the snow, which appeared hard and easy of ascent, he determined, notwithstanding the advice of his guide, who refused to accompany him any further, to make the attempt alone. After a time, finding it impossible to get on, he sat down, in an almost exhausted state, and rolled to the bottom, where he lay for half-an-hour, wet and shivering in the snow. On recovering a little, he drank some cold water, rode home 4 hrs. in a heavy rain, and ate a great quantity of fruit. It was during the month of October, and he caught the fever of the season, but still intended to attempt the ascent again from the other side when he should recover. However, he got worse, and expired in a fortnight. One account says that he died in six days, another in two; while some assert that his death was occasioned by the wounds he received in his fall.‡

We now come to the real ascents, those of Hamilton and Tchihatcheff. The former of these travellers, who was the pioneer of all future explorers of the mountain, started from Everek on July 29, 1837, with several guides and a body

* Solinus, xlv. 4.

† Hamilton, ii. 275.

‡ Hamilton, ii. 266.

of guards, and rode a good distance farther up the mountain than we did on the first day. He was unlucky enough, however, to be caught in drizzling rain, and having no tent, was forced to bivouac on a carpet under a large stone. The next morning he took the same course as we did, except that he kept more to the left in ascending the side of the gully, and mounting for a considerable distance over the snow, which then covered the detritus and fallen rocks, made his way straight to the summit, or rather the rocks immediately below the summit, without approaching the arête. The sky here was clear above him, but the view was almost entirely intercepted by a sea of clouds below. M. de Tchihatcheff, the Russian *savant*, also devoted two days to the ascent, and followed much the same route, but I am unable to discover from his account whether what he calls the highest attainable point is that which Hamilton and we ourselves reached, or whether it is only the arête. What makes it probable that it was the latter is that he computes the height of the summit above this as 100 mètres, an estimate which it seems hardly possible for anyone to arrive at who had reached the higher point. His ascent was made on August 15 and 16, 1848.

The interest which attaches to Argæus arises partly from its being considerably the highest mountain in Asia Minor, and still more from its being the second in importance of the remarkable extinct volcanoes which form a line through that country and Armenia. This commences in the Burnt Country, as it was called in ancient times (*Κατακεκαυμένη*), in the west of Phrygia, where the surface of the land over a wide area is covered with well-marked craters; then rises in Argæus; afterwards reappears in the centre of Armenia, where the massive Bingheul Dagħ stands, two or three days' journey to the south of Erzeroum, and the loftier Sipan Dagħ, above the lake of Van; until it reaches its final point and greatest elevation in Ararat. No eruption of Argæus has occurred within the historic period, but Strabo says that in his time flames used to burst out of fissures around its base. As might be expected, the neighbouring country is much exposed to earthquakes, and that of 1835, in particular, did much damage and destroyed many lives in Kaiserieh. It will be seen from the account that I have given that there is no real difficulty in the ascent.

EXCURSIONS IN THE SOUTH-WESTERN GRAIANS.

By GEORGE YELD.

THE perusal of Mr. Cowell's interesting account of his ascent of the Levanna in 'Vacation Tourists' aroused my interest in the South-Western Graians, and awakened a desire to go and see the district. It was therefore with no small satisfaction that on August 4, 1878, I found myself with Mr. James Heelis and Alphonse Payot, of Chamonix, at M. Jean Culet's, at Bonneval. After dinner we invited M. Culet to take a glass of wine with us in the summer-house in his garden, and proceeded to discuss our plans. He recommended to us J. J. Blanc, dit le Greffier, whom he described as an enthusiastic chamois hunter and mountaineer. After a pleasant talk we decided to engage the Greffier, whose appearance was promising, and who afterwards proved himself a good man on rocks, and to start for the Col de Séa on the morrow.

On August 5 we left Bonneval at 5.12 A.M., and reached the Col de Séa at 9.12. Here we spent a lazy hour, and then I started to make the first ascent of the Ciamarella (12,081 ft.*) from the Col, Heelis having good-naturedly agreed to wait for us. After reaching a second col, Signor Martelli's Col Tonini, nearer the Ciamarella than the Col de Séa, and crossing some steep snow-slopes with a patch of rocks in the middle, we struck the arête of the Ciamarella,† which runs towards the Albaron, a little to the left of the conspicuous point, which in the note sent to the Journal I called with the Greffier's sanction Pointe de Chalanson. The Albaron itself is called Pointe de Chalanson on the French map, and the name Albaron given to a lower point more to the west. With this explanation I retain the Greffier's nomenclature. By this arête we reached the summit in 3 h. 45 min., including halts, from the Col de Séa. The snow was very soft, which partly accounts for the long time we took. The popularity of the Ciamarella amongst Italians was proved by the number of cards—thirty-four—which we found in the cairn. Clouds and mist robbed us of the distant view,

* The exact height of the Ciamarella is still doubtful. The height given in the text is that given by Signor Tonini. Count Paul de Saint-Robert, however, makes the height 12,133 feet by comparison with Turin, and 12,143 feet by comparison with the Great St. Bernard.—EDITOR.

† Probably a little to the right of Signor Martelli's Col de la Ciamarella. 'A. J.' vii. p. 317.

but as we looked back towards the Col de Séa the black precipice on our right, contrasted with the spotless snow, looked like the wall of the bottomless pit. We rejoined Heelis on the Col in 2 h. 5 min. Rain fell before we reached Bonneval, but afterwards the clouds passed away and revealed a frosty and star-sown sky.

Our only expedition on August 6, except to a pleasant alder-shaded resting-place amongst the rocks just across the bridge over the Arc, where oak and other ferns grew luxuriantly, was to one of the torrents above Bonneval to bathe. At 2 A.M. on the 7th it rained heavily, so that we did not start for the Albaron, as we had intended to do. But as the weather afterwards improved we left Bonneval about 9, accompanied by Payot. On our way to the Glacier des Eivettes we fell in with several shepherds, one of whom took a great interest in the marvels of my maps* and Heelis's glass. We pointed out to them the way by which we intended to pass from the Glacier des Eivettes to the Glacier du Mulinet, whereupon they told us that we could not possibly pass there, as no hunter dared to cross. However, in 2 h. 5 min. from the Glacier des Eivettes we reached our Col (circa 10,650), which we propose to call Col du Grand Méan,† after crossing several snow-ridges of surpassing beauty. We went down to Bonneval by the Glacier du Mulinet and the Récula torrent.

On August 8, with Payot and the Greffier, we started at 2.20 A.M. for the Albaron. We followed the usual route to the Glacier des Eivettes, and then, instead of crossing the ice and trying to force a way through the séracs to the south-west, kept at a considerable height above the glacier. Here I gathered 'le vrai génépy des Alpes,' and we saw several ptarmigan. Our route then lay across the snow-slopes under the northern arête of the Albaron, and walking very leisurely under a blazing sun and in very soft snow we struck the eastern arête of our mountain, at a height of 11,600, at 10.10. The last part of the slope immediately below the arête was of ice. We then kept along the ridge and reached the summit (12,014), over snow and rocks, at 11.10. Much less time would probably suffice for future parties.

While we were on the top, from which we enjoyed no distant

* I was indebted to the courtesy of Messrs. Longman for an extra copy of Mr. Nichol's excellent map of the Southern Graians.

† There is a curious mistake in the French Etat-Major map to the south of the Glacier du Grand Méan, where the height of 3,858 mètres is attached to a nameless peak.

view owing to the clouds, a party of four Italians with a guide and porter arrived by the usual route. The whole party were tied together with a 'slender cord' (I use Mr. Freshfield's words) 'absolutely worthless for mountaineering purposes.' Our descent to the valley of the Arc below Bonneval was wearisome, though we had one fine view of the valley in a gleam of sunshine, with the zigzags of the Mont Cenis road well seen in the distance. The river Arc looked like molten silver, and the petty villages of Villaron and Bessans with their grey-red houses were very picturesque. The monotony of the climb was varied in one place by Heelis making the Greffier leave the rotten rocks which had tried our tempers, and glissade down a very steep slope, on which we managed not to come to grief.

At 2.25 A.M. on August 10 we started for the Pointe du Mulinet (circa 11,580), the highest of the Rochers du Mulinet, incited thereto by our host's assertion that it was still unclimbed. Our ascent was made by the couloir on the right of the peak, which is well seen from M. Culet's garden. We reached the top without any hurry at 8.50 (halts included). At the foot of the peak we noticed a number of dragon-flies lying frozen on the snow. Our disappointment at finding a newly-built cairn on the summit, with the name of its architect, Signor Barale, therein, was lessened by the magnificence of the view. Most of the great peaks of Dauphiné, the Cottians, the Graians, and the Pennines, stood up before us. The dark Viso, 'towering in pride of place,' the cathedral spires of the Aiguilles d'Arve, the Grande Casse with its white cornice hanging over black walls of 'kingliest masonry,' and the Grand Combin were conspicuous in splendour; but Mont Blanc with his mighty Aiguilles, spear after spear, set in array about him, under a heaven of faultless blue, was the most glorious sight I have ever seen in the Alps.

'Spare me, O Great Recollection, for words to the task were unequal.'

On our way back we were overtaken by heavy rain, the prelude to a thunderstorm, which, however, did not last long.

On August 11 we said good-bye to our host, and left Bonneval in the afternoon (without the Greffier, but with the addition of Jean Martin, who had arrived on the previous evening) for one of M. Culet's chalets at Duis, on the banks of the Arc, about 2 h. above Bonneval. At 6.25 we reached the chalet, from the river-lawn in front of which the Ciamarella and Albaron are well seen. The accommodation was good, and the brawling of the Arc invited to sleep.

Our intention was to climb the Central Levanna and descend to Ceresole. We had so much difficulty in making out which was the Levanna that I was led to send a note to the *Journal** on the subject, which will save me from further explanation here. We left Duis at 3.45 A.M., and, mounting by an ascent which is so easy and so obvious to anyone on the spot that I need not describe it, reached the summit-ridge between the eastern and central points of the Central Levanna at 8.6 (halts included). Here we were unable to agree as to which was the real top, but after some hesitation decided on the central point, which we attained by a pleasant climb of perhaps 10 or 15 min. by a rock chimney. We were probably the first travellers who had reached this point, as we found no cards except that of the guide A. Castagneri. The view was most magnificent, almost a repetition of the glories seen from the Mulinet. In our descent, having reached the Glacier de Girard,† we made for the gap‡ between the Italian or Eastern Levanna and its western neighbour with the intention of descending to Ceresole, but Martin, on inspection, pronounced against the slope at our feet in its existing state, and then made for the Col de Girard (10,118) at a good pace. When we reached the Col and began to descend we were met by a thick mist, but the track of a previous party saved us much trouble, and we reached Forno at 4.20 P.M., having loitered when some way down to gather bilberries.

We found Forno an agreeable change after Bonneval; there was a warmth and softness even at this height which reminded us that we had entered Italy. The guides, too, were pleased, for, as they said, 'à Bonneval il était bien triste—ici il y a du monde.' At Bonneval our 'world,' besides the members of M. Culet's household, consisted of a stonecutter who had been in America, whose English was confined to 'Good-night, Mistare, slip vel,' and a nefarious brute of a dog who every evening came to bark at us. The inhabitants were busy threshing rye with flails, which they wielded with great skill; every sheaf ran the gauntlet of the flails of a whole family, sometimes as many as ten or twelve. The proprietor of the Forno inn was absent, but an elegantly-attired manager from

* 'A. J.,' ix. p. 168.

† The Glacier de Girard is called Glacier de la Source de l'Arc in the French Etat-Major map.

‡ The Colle Perduto (3,240 mètres), of SS. Vaccarone and Nigra's 'Guida per le Valli dell'Orco, di Soana, e di Chiusella.' Turin, 1878. (P. 70.) The inferior peak on the west is called the Levannetta.

Turin attended to us with much civility, and we really fared very well. A room was found for us at some distance from the inn with two clean beds. While we were at dinner under a screen of birch boughs in front of the inn, where on our arrival the curé was enjoying a game of cards with some of his flock, we saw more of the 'monde' of Forno; first, several young officers in uniform, and presently, to our astonishment, a party of young ladies, on whose 'armies of lovely looks' I dilated to Heelis, who was sitting with his back to the road. We wondered whether these were a reading-party of 'sweet girl graduates' from a Piedmontese Girton, for a black-bearded professor was in attendance upon them. Before dinner was over a rabble of children gathered in the road near us, who as soon as we rose from the table cleared off everything that had been left uneaten. We took an evening walk along the Lanzo road, which ran through irrigated meadows, whose bright green formed a striking contrast to the wild crags that showed against the sky.

On the morning of the 13th the higher ridges were veiled in mist, so we decided to cross the Col della Piccola to Ceresole. Martin gave us a laughable account of how he and Payot spent the night in a hayloft which also served as a henroost. Some of the lusty birds mistook Martin's candle for dawn and were loud in greeting, neither did they leave off when the candle was put out. After a time Martin's patience was exhausted, so he arose and with heart-cutting words pursued and ejected the supposed offenders. To do this he had, of course, relighted the candle, which soon awoke a fresh crowing chorus. This performance, which he several times repeated, served as the basis for many a joke.

We passed through some charming scenes on our way to the pass. Many waterfalls dropped their white veils from ledge to ledge, and amongst the moist rocks flourished countless ferns. On the Ceresole side of the Col there was no mist, and we had a pleasant walk to the Stabilimento, which was reached in something over 8 hrs., very lazy walking, with many halts, including a long one on the Col.*

Picture to yourself a wooden barn on the road to ruin, with a wooden balcony running along its front. Suppose a large sheet, fastened under the balcony and supported by rude poles, spread out as an awning to keep off the sun. Wattle the

* The 'Guida per le Valli dell' Orco, di Soana, e di Chiussella,' p. 74, allows 6 hrs. from Ceresole to Forno; Signor Clavarino, in 'Le Valli di Lanzo' (Turin, 1874), p. 77, 4½ hrs. from Forno to Ceresole.

space between the barn and the end of the awning with green fir branches; add to this an air of general instability, such as to suggest that the first high wind will whirl it all away, and you have the *Stabilimento*. But the rooms are not uncomfortable and the fare is excellent, and Heelis and I did justice to it. Trout in August argued crime hateful to the fisherman's soul; but was not a dinner at Ceresole to be the recompense for our long enforced frugality, and could we wait to discuss morality when we had the chance of discussing fish? Peaches, too, and pears—may others find them as we did.

In a green meadow in front of this strange hostelry, a shady sycamore offers a cool resting-place of 'various view.' To the left rise bold masses of rocky mountain. In front the Orco foams over the stones in noisy haste to cast himself down the rocks a little lower. Across the river an old house with its air of quiet happiness, its green pasture gently sloping to the Orco, and a line of trees fringing the river's edge, recalls pleasantly the peacefulness of an English homestead. Behind it rise the pinnacles and spires of a striking ridge that juts out at right angles from the rocky rampart that bounds the southern side of the Val d'Orco, while noble pinewoods clothe the lower slopes and soften the naked wildness of the crags above. The great mass of the Levanna, its dark rocks relieved by the snows of the little Glacier de Forno, and the white slope that falls steeply from the Girard, fitly closes in the view to the west.

On the afternoon of the 14th we started for a *châlet* at Breuil, to ascend the Grand Paradis. We had engaged the same local guide who, as porter, accompanied Mr. R. Pendlebury's party in 1875. The *châlet*, height circa 8,000, was the most wretched and filthy den we entered, but the herdsmen were very hospitable. It were long to tell how the rain poured down in streams, how an old umbrella did duty for a door, how an invalid dog yelped if you did but look at him, how whenever one got to sleep somebody lit a candle; how in fact we spent a most miserable night. We were roused at 1.30 A.M., and the weather allowed us to start at 3.8.

Soon after sunrise a sight was given to us of marvellous beauty; it is, indeed, impossible to convey an idea of the exquisite tenderness and transparency of the colours. We saw to the south-west, beyond the plain of Italy, a range of dark-blue mountains, with a pale-blue sky above them; nearer us, though still far away, hung threatening clouds, torn from whose fringe floated here and there an inky fragment; while over the plain was spread an ocean of mist, seeming to be the floor of the

plain itself, of a pale oaten yellow, lovely beyond description. One seemed to be looking through some—

Magic casement opening on the foam
Of perilous seas in faery lands forlorn.

After passing a rocky col to the north-east, the Colle della Torre (10,233 feet), which we reached by a royal hunting-path, we made for the Col du Mont Corvé; from that point our route was probably the same as that of Mr. R. Pendlebury's party, and free from difficulty. But alas, when we were about 1½ hr. from the top, the weather, which had been gradually getting worse, drove us back; so we turned and trudged sullenly down to Ceresole, which was reached at 3.20 P.M.

On the lovely morning of the 17th, with Venus shining softly in a 'daffodil sky,' we left the Stabilimento at 3.20 A.M., and having nearly reached the highest ch  let at Cerra or Serue, halted for breakfast by a clear streamlet. We here engaged a shepherd to carry our baggage, who proved himself a good fellow. We now had in front of us a cirque of repulsive-looking rock, with a broken tower on either side; above the left tower, nearer to the Col de Gal  se, there is a prominent snow-peak. We climbed up this left tower and were going to ascend a sharp point of rock that shows well from below; but an easier way was descried, so we struck down a little to the left, kept at a level along the rock wall, and after passing through a natural arch of rock, and crossing several couloirs, still at a level, mounted by rocks to the left, and reached the snow without difficulty. At 10.28 we were on the Pointe du Bousson (10,945).

The view was magnificent; in fact, on the whole, we thought it the finest we enjoyed; even the guides were moved to admiration at the glories spread out before them. Mont Blanc and his Aiguilles were again cloudless, and all the great Pennine mountains of unspeakable splendour. The Grivola was very striking, and our friend the Levanna looked quite formidable. We saw, too, great part of the valleys of Ceresole, Laval, and Rheme, and part of the plain of Italy. We thought that we even distinguished La Superga. We spent 1½ hr. upon the top, and built a huge cairn, which was afterwards conspicuous from Laval and Suche.

We went down across the snow towards the Col de Gal  se, struck a ridge of rocks, descended a little in the direction of the Ste. H  l  ne, and then dropping down a couloir reached the Glacier de Gal  se, and joined the route of the

col of the same name. We reached Fornet at 3.5 P.M. The slopes below the glacier were rich in flowers, pansies, gentians, forget-me-nots, and Alpine wall-flowers, as well as very fine edelweiss, of which hitherto I had only seen one tuft at Bonneval, on the way to the Glacier des Eivettes, and one or two tufts near Serue.

This expedition can be strongly recommended. The view from the Bousson owing to its position, as a glance at the map will show, is certainly one of the finest in the Alps, and the time required is very little longer than would be necessary to cross the Galèse.

After some delay and discussion at Fornet, we went on down the valley to Laval, where we found decent quarters, recently much altered for the better, chez Bonnevie. Our dinner was much improved by some mushrooms, gathered above Fornet, which, thanks to Heelis's superintendence, were served up in first-rate style.

On the frosty morning of the 18th we left Laval at 3.40 A.M., taking with us a local porter who, as we soon found out, though he walked well, knew nothing about his own mountains. Our object was to cross to the Glacier de Rhème, and attack, from the south side, the wall of rock which runs from the Grand Apparei towards the Ste. Héléne, then climb the Grand Apparei, and descend to Suche by the Glacier de Bassac. We went up to Fornet, and then in a slanting direction across the ridge that bounds the valley of the Isère on the north. As we drew near the top of the ridge we had a fine view of the Chardonnet from a small lake in which the sun flashed brightly. A little further on the ground was almost hidden by saxifrages, 'eyed with blooms, minute yet beautiful.' But we had turned to the left too soon after passing Fornet, and at last found ourselves on a shoulder of the Ste. Héléne, whence it was difficult, if not dangerous to advance. We then descended to the Glacier de Rema of Mr. Nichols' map, our mistake having caused us to waste two hours and a half, and so made for the foot of the Grand Apparei, which we ascended by its southern arête, a most enjoyable climb. The top was reached at 12.10, and from it the view was magnificent.

We came down by nearly the same route, and then keeping for some distance along the top of the before-mentioned wall of rock (well shown on the Alpine Club Map), which runs towards the Ste. Héléne, effected a descent to the Glacier de Rhème. Though the last part of our way was down a couloir liable to falling stones, we did not see any stones fall, and I believe it was perfectly safe when we traversed it, as the sun

had ceased to strike it for some time. The glacier gave us no trouble, and led us past the eastern face of the Apparei, which rising in defiance precipice after precipice, to the summit of the mountain, justifies the fitness of the name 'The Great Wall' (Granta Parey). We reached the lower châlet at Suche at 4.56 P.M. This châlet was new, clean, and commodious, for the builder had evidently kept in view the wants of travellers. The owner was away in the Val d'Aosta, but a shepherd was sent down to Rhême and returned with some white bread and a live fowl.

On the 19th we left Suche at 7.22 A.M., and crossed over part of the Glacier de Fos to the châteaux of Vaudet in 4 hrs. 5 min. This col (circa 10,540 ft.) is of the easiest character possible. Before we got to Vaudet we were overtaken by drenching rain. The châteaux were not inviting, but the herdsmen were very hospitable. On an old moraine above the left bank of the Vaudet torrent we saw seventeen or eighteen chamois feeding together.*

Our object in coming to Vaudet was to make the ascent of the Aiguille de la Grande Sassièrè by the 'rock and ice-slopes on its eastern flank.' But the morning of the 20th was very unfavourable, so we were obliged to give up our plan. The châlet was not rain-proof, and Heelis's boots were full of water in consequence, whereat Martin exclaimed loudly, and proceeded promptly, though unintentionally, to pour half the water into mine, which had escaped all perils by faulty roofs.

We left at 6.28 A.M., the mountains being all veiled in churlish mist, and crossed to the Val de Tignes by the Col de Vaudet. From the slopes on the western side the pass, when the mist had somewhat lifted, we enjoyed a glorious sight; the summit of the superb Pourri, with a narrow arch of blue sky above it, the rest of the mountain being wrapped in cloud, while here and there a sunbeam piercing the veil of mist flashed on the glaciers below. As we descended the weather kept improving, and the Val de Tignes in sunshine, with its firwoods and green pastures, seemed perhaps even more beautiful than it really was after the desolation of the Val Grisanche. Our halts were liberal, and when we got to the bottom of the valley Heelis and I loitered to gather strawberries, which were just at their best. We struck the new road near Brévières, and reached Tignes at 1.17 P.M. Besides the noble glaciers of the Pourri, the firwoods, cornfields, and green

* It may be interesting to add that we saw chamois on the Ciarella, Mulinet, Col de Cerra, Col de la Gailletta, and Col de Fos.

meadows, there was much fine scenery on the new road itself, especially in places where it passes through savage gorges by the side of the roaring Isère.

We found the accommodation chez Révial Florentin, better than we expected, a new house having lately been built, and the old one converted into stables, &c. No extortion was practised upon us; perhaps this was in part due to competition which has reached even Tignes, for as we entered the village we were assailed by two rival innkeepers, one of whom took our fancy, but our extra baggage had been sent to Florentin Révial's from Bonneval on the recommendation of M. Culet.

The morning of the 21st we spent in idleness and the Isère; and in the afternoon went up to the chalet de la Cascade, one of the Sassièrè chalets. The people were busy haymaking, but we were treated with great hospitality. Our evening here was very enjoyable. Our host and his daughters not only did their best to entertain us, but talked with much intelligence; Martin's cooking was all that could be wished; the chalet was clean; and we were happy in the prospect of a fine day for the morrow; even the dogs, though at first fain to attack, yielded to the persuasion of chicken bones.

The chalet is in a beautiful situation, hard by the torrent, and commands fine views of the Grande Casse and the Grande Motte.

Next day we left at 3.42 A.M., and reached the Col de la Gailletta at 6.32. We had meant to try the route by the eastern flank of the Sassièrè mentioned above, but when we reached the Petit Mont Bassac, the south-eastern arête seemed easy, so we followed it to the summit (12,323 ft.). Our route from the Petit Mont Bassac is probably the same as Mr. Coolidge's.* Though at first a bitter wind assailed us, it subsided before we reached the summit (at 10.24, halts included).

We there found disappointment in Mr. Coolidge's card, but the view did its best to compensate us. We saw once more most of the † principal Dauphiné, Graian, and Pennine summits, and though there were some clouds in the sky their tints were of so fairylike and tender a loveliness that they added to the glories of the morning. We saw, too, the lower ranges far away to the west, to great advantage, and the sunny blue waters of the Lac de Tignes set in green pastures, with the

* 'A. J.,' ix. p. 101.

† See 'Peaks, Passes, and Glaciers,' 2nd Series, vol. ii., pp. 363 foll. for a list of the peaks visible; as well as for an excellent description of Tignes and its neighbourhood.

little glen below, with its firtrees and tumbling stream, formed a charming picture—a pastoral day-dream—enhanced by contrast with the black precipices and ‘scornful crags’ of the Grande Casse.

The descent to the châlet was very easy. On our way we met some of our friends haymaking, one of whom asked me if I was not delighted with the view from the summit, and took an intelligent interest in an account of our route. The châlet was reached in 1 hr. 40 min. Then followed copious draughts of fresh milk—to me a joy denied. After a hearty farewell to our hospitable entertainers we descended in the sunshine to Tignes, the glories of the Pourri beguiling our way.

On the morrow we went up in drizzling rain to the Lac de Tignes, and there our party separated; Heelis and Martin, by the Col de la Leisse to Pralognan, for the Grande Casse, and Payot, with whom, both as guide and companion, I had every reason to be pleased, and I, by the Col du Palet, to Brides les Bains, which we reached in 8 hrs. 5 min. (including halts), from Tignes. So ended a most enjoyable holiday.

Anyone who visits this district cannot fail to be struck by the magnificence of the distant views, which cannot be surpassed, and will probably be surprised, as we were, at the size of the snowfields. The view, for instance, from the ridge above the Glacier des Eivettes of that fine glacier, flanked on one side by the flowing curves of the snowy Ciamarella, and on the other by a bold aiguille of bare rock, as well by what it suggests as by what it shows, is very impressive. The accommodation was, if not all that could be wished, much better than we expected; notably at Forno, Laval, and Tignes, and the herdsmen invariably hospitable. It is pleasant, too, to be free from the sight of deformity, and the whine of the mendicant. I hope this account is not too rose-coloured, for I am conscious that as I write bad weather and discomfort are alike forgotten, and everything seems bathed in sunlight, while ever brightest

Across the web of many memories comes
the glorious vision of Mont Blanc, free from all touch of
cloud.

NOTES ON OLD TRACKS BY THE EDITOR.

1. *The Oberland.*

While new and little visited districts obtain from time to time ample notice, the changes in old haunts naturally run a risk of being passed

over. Yet the years bring many changes, for better or for worse, which deserve record.

I regret to have to begin by noting a change for the worse. The assault on the Rigi-Kulm* was only an unusually outrageous sign of a spirit too prevalent among Swiss innkeepers. Good hotels and civil landlords are still happily the rule, and some of the Swiss hotels are among the best in Europe. But there are now not a few Alpine inns, generally such as lie in tourist-centres outside the great towns, where, on the least question arising, the landlord assumes a tone to which Englishmen are not accustomed at home, and which they encounter in no other part of Europe. Goethe's remark, 'He thinks to show himself my equal by being "grob,"' he only shows himself "grob,"' is frequently illustrated. The old innkeeper, with his hearty welcome and friendly care, has become, I will not say extinct, but comparatively a rarity.

Swiss innkeepers may, perhaps, retort that they cut their cloth according to their customer, that the modern tourist is as different from the old traveller as they are from the hosts of former days. "Υβριε ὑβριν τικτει. The argument would be more effective if they treated old travellers with some respect when they saw them, and if they did not frequently reserve their worst behaviour for inoffensive and unprotected ladies. Their best excuse would be, that they know no better, that the foreigner accustomed to the good breeding and mutual courtesies of France or Italy mistakes for intentional rudeness the result of a low standard of social manners.

From another point of view the Swiss innkeeper is sometimes an unsatisfactory phenomenon. It is strange, considering the democratic character of the nation, how completely some valleys are subject to a single despot. He is, of course, the chief innkeeper. He has slowly concentrated into his own hands the whole business of doing for tourists. Like Mr. Whiteley, he is 'The Universal Provider.' Carriages, mules, and guides are all taken through his Bureau. Sometimes, no doubt, the despot is a beneficent one. But the valley does not seem to grow rich under his sway, however he may prosper himself.

One more grumble and I have done. Many of the large mountain inns are pervaded, or environed, by the most abominable smells. A half-and-half attempt, far worse than none at all, has been made to follow modern sanitary fashions. The result is simply disastrous. It speaks volumes for Alpine air that illness so seldom follows. But if innkeepers could realise how many families shorten their stay from this cause, they would be more careful in their drain-making.

It is not, I think, generally known that the summit of the Finsteraarhorn (as well as that of the Agassizhorn to its right) is well seen from the road at the lower end of the village of Grindelwald. To those who do not know the mountain, it may be useful to point out that on any clear evening the sun's last rays gild it, like a golden flag, after all the other tops are cold.

* Different versions may be given of this affair, but it appears to be undisputed that the proprietor of the Kulm hôtels earned exclusion last year from the tourist-list of his great patron, Mr. Cook. See *The Excursionist*.

A most interesting excursion has been added to those easily made from Grindelwald. From the foot of the upper glacier a path zigzags up among the pines on its (true) left bank until it reaches the cliffs which form the base of the Mettenberg. Where these press in on the glacier advantage has been taken of a natural cleft or chimney (known as the 'Milchbächloch') to fix a long series of stout ladders. Arrived at the top, the traveller finds himself at the mouth of a natural cave which pierces the cliff and gives him access to the hollow between the ice and rocks. Steps, if not already made, can be speedily cut up the bank of ice which leads on to the level glacier above the final fall. There is no more difficulty than in crossing the Mer de Glace. A steep grass slope leads up to the Enge path. Those who are not satisfied will turn right and go on to the Gleckstein, or the Wetterhorn. Those who only want a short excursion can turn to the left along the Enge and regain the Scheideck track. Botanists will find the avalanche beds under the Wetterhorn an excellent hunting-ground for plants whose flowering season has passed elsewhere.

The snow-wall of the Strahleck, one of the bugbears of early explorers, no longer exists except in guide-books. From the top of the pass the descent on to the névé of the Aar glacier lies over very easy rocks to a point only some few feet above the 'Bergschrund.'

The scenery of the pass has been, I think, somewhat overrated. To those who have seen the Schreckhorn from the Wetterhorn and the Finsteraarhorn from the Schreckhorn neither peak seems to do itself justice. The ice phenomena of the Aar Glacier, its tables, moulins, &c., are, however, on the grandest scale; and its surface is such good walking, that the lateral extension of the descent to the Grimsel is hardly felt.

The paths to the Männlichen are charming and easy. The ascent from Grindelwald ($3\frac{1}{2}$ to 4 hours) is far more attractive than that to the Little Scheideck, and the track round from the Männlichen to the Scheideck is an easy stroll of 1 hr. 15 min., with a superb view of the Jungfrau half-way.

The comparative merit of the view from the Wengern Alp and that from the new inn on the Männlichen is a subject affording great opportunity for argument. But it seems to me beyond argument that everyone ought to see both.

The new inn on the Männlichen, sufficiently comfortable for a stay of a few days in fine weather, is perched on the brow of the flat-topped flowery down which forms the extremity of the promontory separating the valleys of the two Lutschinen. To the east, after a short sudden dip, green alps slope gently towards the basin of Grindelwald and its massive rock-peaks. To the west, steep crags, carved like a sea-coast into bays and headlands, break down steeply upon the meadows of Wengen. Far below the eye penetrates the depth of the valley of Lauterbrunnen, and counts its hamlets and cascades to where the bold peaks of the Breithorn and Gspaltenhorn close the view. Between the spectator and the Mönch Eiger and Jungfrau rises the steep cone of the Tschuggen. But it is not high enough to spoil the view, serving rather as a scale by which to measure the loftier summits.

The Männlichen view is certainly the more comprehensive. As a

panorama it is superior. The Lauterbrunnen Valley, the glimpse of the lowlands, the Lake of Thun, and a very picturesque aspect of the Titlis seen over the Great Scheideck, are all added to the Little Scheideck view. Yet, almost to my own surprise, I find myself giving my vote for the latter. From the Scheideck the three great peaks combine in a more picturesque mass, are closer at hand. After all, it is the proximity of those three that gives their character to both scenes; their splendour is what we remember, and all the rest is secondary.

The inn on the Little Scheideck is a good centre for ladies' walks, particularly for glacier walks. An easy path leads in half an hour from the inn to the Eiger Glacier, and once on it you may go up as far as you please towards the Eiger Joch, passing through glorious *séracs*, with views of the green and blue lowlands framed between the ice-blocks. The Guggi Glacier and its hut is a short two hours' walk, and may be explored for some distance by those who know where to go. Such excursions give a far better idea of the ice-world than the conventional visit to the Grindelwald Glacier.

Why was Mürren, not Wengen or the Wengern Alp, pitched on as the place where judges and headmasters should take their 'Luft-Kur.' The two monster hotels are planted on the one spot from which the Jungfrau is absolutely hideous. The range round the head of the Lauterbrunnen Valley is grand, but far from picturesque. There are no gradations of distance in it; it is a flat regular palisade.

Trachsellauinen, on the other hand, is a really romantic spot, deserving a better furnished inn. The Breithorn and the Schmadribach form a picture, and the forest scenery is, for this part of the Alps, extraordinarily rich. Nowhere else in the Oberland have I seen so lavish a growth of ferns, fruit and flowers.

Rosenlauri Bad is one of the quietest and best halting-places in the Oberland, just out of reach of the lowest class of travellers, the carriage company from Interlaken, who spend their days out at Lauterbrunnen and Grindelwald. The landscape has not the sublimity and largeness of Grindelwald, but the pinegirt lawns and wild limestone crags of the Engelhörner give it a Tyrolese charm.

Everybody who has been to Switzerland, or to a picture gallery, knows the meadow below the Baths. Comparatively few have turned aside to explore the sloping lawns concealed behind the screen of firwood which shelters the inn, where noble sycamores climb in columns up the open, or the Eiger, warm with sunset, peers wickedly over the green ridge of the pass. From the Baths there is a very fine easy excursion of 3 or 4 hours not mentioned in the guidebooks. Paths have been made up both banks of the glacier, and it is easy to cross the ice immediately under the finest crevasses.

For those who object to a night in a hut the little used Rosenlauri route to the Wetterhörner has advantages. It is a pleasant and varied climb among the crevasses of the glacier, or, when those prove too many for one, up the rocks of the Tossenhorn, to the Wettereismeer. I have climbed twice this way, once to the Wetterhorn, once to the 16 ft. higher Mittelhorn. This comparatively neglected peak is made for beginners, having a rock ridge and a snow crest where they may prac-

tise their powers without risk. The view from it is superb. The outer peak projected against the plain is a singular object. The basins of the two Grindelwald glaciers, with the peaks above them, Schreckhorn, Eiger and Mönch, combine to form the most glorious mountain mass conceivable, falling in noble lines into the green basin of Grindelwald. I was fortunate in seeing this view last summer under most favourable conditions of light about 3 P.M. Those who sleep in the highest hut and hurry over their peaks, are hardly aware how much they lose. Of the most beautiful mountain views I have seen, half, at least, have been seen late in the day. I might put it much more strongly—from all the summits I have been on in fine weather in the afternoon, the views have been beautiful; many morning views are only extensive. On this occasion the colours in the atmosphere were such as Turner strove to imitate. The effects of light and shadow on the snowfields during the descent, as the shades of a perfectly cloudless but vaporous evening deepened, until they were broken by the clear light of the moon, shot between the crags of the Engelhörner, were too beautiful for any words or painting.

I strongly recommend, therefore, mountaineers who have climbed the Wetterhorn by the ordinary route from the Gleckstein, to descend to Rosenlauri, instead of grinding down the same hot, wearisome rocks. In the descent they will do well to keep at first close to or on the rocks of the Tossenhorn, and in the long snow gully, which turns the lowest icefall, to refuse to glissade. It is a vault over a stream, and last summer the arch was broken in several places. It was in just such a spot, where no one but a mountaineer would suspect danger, that M. Cordier perished in Dauphiné.

This route is a curious example of how difficulties have varied—or how differently they may be regarded. Mr. Spier—the Scotchman who, in 1845, first climbed the Mittelhorn—descended this way and gave a grand account of the perils. This was only natural, considering both the date, and the fact that the party were *descending* an unknown glacier. Then the 'Alpine Guide' got from somewhere quite a formidable account of the difficulty of the route, and of the risk from falling stones.

In 1866, however, a friend and I went up the glacier without obstacle of any sort, reaching the top of the Wetterhorn in 6 hrs. from Rosenlauri.

Next—in 1869—a traveller, with Jaun as guide, fell in with an icewall, steeper than the last slope of the Wetterhorn, where stones 'whistled like cannon balls' past his ears, a place which 'late in the day is impassable.' Then on the face of the Tossenhorn they found crags where there were 'really no inequalities of surface for holding by,' and where Jaun nearly fainted in consequence of his exertions ('Alp. J.' vol. iv. p. 255). They were $7\frac{1}{2}$ hrs. in reaching the Wetterseer from the Baths.

This account I was disposed to look on as altogether highly coloured, until so far as the falling stones and the hard ice are concerned, it was repeated to me by no less authorities than Mr. Leslie Stephen and Mr. Coolidge.

In 1879 I again ascended and returned by this route late in the day.

The rocks of the Tossenhorn, on to which we were forced by the crevasses, we found loose and tiring, but far from difficult.

I can only speak of the route as I have found it. Having passed three times at different hours of the day, without seeing a single stone fall, I cannot represent the danger from this source as serious; nor, having gone up the last time with two ladies, unused to climbing, can I believe that any Clubman will find himself in difficulty, even should the crevasses force him on to the rocks, provided, of course, he hits on the best route.

I have quoted these differing accounts partly to relieve myself from responsibility in case the route should go to the bad again, partly to show by a striking example how very dangerous it is for Alpine writers to charge their predecessors with exaggeration. A slope changes from ice to snow, a right instead of a wrong route is taken on rocks, boulders cease for a season their cannonade, and a 'severe and hazardous climb' becomes a 'lady's walk.' Both 1866 and 1879 were exceptionally snowy years, and in this probably lies the explanation of the discrepancy between my own experiences and those of better mountaineers.

I may add that the local guide at Rosenlauri is capable and modest in his demands, which is more than can be said of some of the men across the Scheideck.

The scenery of the Rhone Glacier group vividly recalls to a Tyrolese traveller the Oetzthaler Ferner. In both the glaciers are too big for the peaks. In few parts of the Alps is a snowfield found so vast, and so tiresome, as that of the Rhone glacier. The Trift Glacier, on the other hand, is a most picturesque ice stream, with noble séracs, two fine and pure icefalls, and a singularly well-defined arrangement of dirtbands. Despite the books 10 hrs. are quite enough from the Grimsel to Mühlestalden by the Triftlimmi.

ALPINE NOTES.

ASCENT OF CHIMBORAZO.—Mr. E. Whymper, with his two guides, the Carrels of Val Tournanche, reached (on Jan. 5) the highest point of Chimborazo, according to Von Thielmann, 20,703 feet. The party started from a tent pitched at 17,150 feet. According to the accounts published, the difficulty of the ascent was greater than had been anticipated, owing to the high wind, cold, and the rarity of the air. The thermometer on the top marked 21° Fahrenheit; 5 hrs., it is said, were spent in climbing the last 1,000 feet; this, if true, contrasts singularly with M. Wiener's 'times' given below.

ASCENT OF ILLIMANI.—M. Wiener, in his important work, 'Pérou et Bolivie' (Paris, Hachette, 1880), gives an account of his ascent on May 19, 1877, of the second summit of the Illimani Group, near La Paz, and not far from Lake Titicaca, already alluded to ('A. J.,' vol. viii. p. 397.) Illimani has three peaks. The highest, the Condor-Blanc, is, according to the traveller, 6,386 mètres, or 20,957 E. feet in height; the second, that which he climbed, and calls the Pic

de Paris, 6,181 mètres, or 20,116 feet; and a third, 300 mètres lower than the highest point. The details of the ascent given are sufficient, but bare. Leaving their mules at 9.20 A.M., at a point 14,027 E. feet above the sea, the party climbed at the following rate: 10.48 A.M. 14,902 E. feet; 11, 15,092 feet; 1.35 P.M. 16,862 feet; 2.44, 18,312 feet; 3.20, 19,512 feet; 4.50, 20,112 feet; thus ascending the height of 6,085 feet in 7½ hrs., or at a pace better even than Von Thielmann's on Cotopaxi, and little slower than that at which Mont Blanc is ordinarily climbed from the Grands Mulets. At one point indeed the pace becomes almost incredible for a time, but even if, as is probably the case, an error of the press accounts for the 1,200 feet in 36 mins. at an elevation of 19,000 feet, the facts are cheering for climbers who look forward to the Himalayas. The temperature on the top was 46° Fahrenheit. The height was estimated by aneroid and boiling-point observations. The ascent presented no serious difficulties. Low walls of rocks here and there proved temporary obstacles, but were overcome with the help of a rope. A deep ravine cut off direct access to the highest peak, and, time pressing, the party were forced to content themselves with the second summit. M. Wiener's companions were MM. de Grunkow and De Ocampo, and three Indian guides.

ALPINE HUTS AND CHAINS.—The following letter has been received:—
 'IMPROVING THE ALPS!'

'Sir,—In the last number of the "Alpine Journal," you call attention to the fact that large sums are annually spent abroad in "building huts, improving paths and removing difficulties in mountain ascents." But you do not—and I cannot but regret that you should have let slip so good an opportunity—raise any energetic protest against the course of action indicated—a course in my opinion, and in that I believe of all true mountaineers, at once wrong, suicidal and unsportsmanlike.

'Let me prove my epithets. Imagine a company of fox-hunters "removing difficulties" by levelling all the hedges and filling up all the ditches; sportsmen, maiming the game, so that it should not fly, before shooting at it; fishermen uniting to net instead of fish their streams. These are no more than fair parallels to what is being done in the Alps, and done—Heaven save us!—in the honoured name of mountaineering. The result of such action can only be to remove all distinction between tourists and mountaineers, by depriving the latter of any field in which to exercise their craft.

'Those who would Bowdlerise the High Alps down to the level of their feeblest visitors can surely never have so much as known what mountaineering means! The essence of our sport, what gives it a charm unknown in ordinary travel, lies in its difficulties. The mountaineer finds his enjoyment, not only in the beauties of the mountains, but in his prolonged struggles with Nature, in the uncertainty of success, in the constant call made on physical and moral qualities, in the exchange of crowds for solitude, in the sudden and complete breaking away from all the comforts as well as all the cares of civilisation.

'A few years ago I should have been ashamed to repeat such a string of truisms. Now, however, we hear of those who would remove all the old difficulties of the Alps; who would provide us with a new set

of dangers, strewing with broken glass the crags of the Matterhorn—as they have already done those of the Col du Géant—covering its shoulders with rotting ropes, sending up scores of tourists to harass (and possibly kill) one another with volleys of stones, launched by their own clumsy feet; who seek to convert every rock, where their forerunners were alone with the stars, into eating houses such as that on the Grands Mulets. *Verbum sapienti satis.*

‘I admit, of course, that here and there, as at the foot of the Schreckhorn, on the Aletsch Glacier, or at the Stockje, a hut may be a good thing. There are a dozen places, perhaps, in the Alps, where a rope is permissible. But such aids ought to be the exception, not the rule. Let those who want to spend money improve mulepaths, subsidise inns, erect observatories, pension guides. But I would implore them not to further this terrible mania for levelling the Alps, for destroying their very character and charm, for (I cannot improve on one of the foreign terms) “la vulgarisation des sommités.” If it is necessary that some sacrifice should be made to touristdom, let one or two summits in every group be abandoned to that hateful ochlocracy. If the Matterhorn must be bound by the Philistines, let at least the Dent Blanche, the Weisshorn, and the Dom be spared.

‘Some such compromise mountaineers might accept. But the tourists and the tourist societies will do well to make peace while there is yet time with the old school of mountaineers, whose name they sometimes abuse. I have already heard rumours of the formation of an Inner Alpine Club, members of which, armed with sharp blades, files and gun-cotton, should proceed to the liberation of the mountains by the destruction of all ropes, chains and huts.

‘The idea is no new one. So long ago as December, 1875, a former Secretary, followed by several members, gave vent at an annual general meeting to views, pithily summarised as follows in the “Journal” (vol. vii. p. 308), “Mr. A. W. Moore expressed his regret that the great peaks should be vulgarised by means of mechanical appliances, and the multiplication of resting-places. He should like to see all huts destroyed, and all ropes and chains cut down.”

‘It would require but little to induce me to join a sect of Alpine Nihilists sworn to carry out these objects.—I am, Sir, yours obediently,
‘A MOUNTAINEER.’

We print our correspondent’s letter, knowing that it represents—even if it somewhat exaggerates—a state of feeling prevalent among Alpine Clubmen. We do not, however, endorse all his statements, nor do we wish to express any opinion as to how far his protest against the ‘vulgarisation’ of the Alps is justified by anything that has yet been done. Such a protest may, however, be useful in suggesting that there are limits which every true mountaineer, or society of mountaineers, would desire to see observed in the ‘improvement’ of the Alps by artificial means, and that these limits have been, in some districts, reached. Mountaineering without its difficulties would cease to exist—and on this point our correspondent has our full sympathy.—EDITOR.

WINTER ASCENTS.—A number of mountain ascents have been made this winter. In the Abruzzi, the Gran Sasso d’Italia (2,921 mètres) was

climbed by Signori Corradino and Gaudenzio Sella on January 9, 1880 (a previous attempt on December 27 by Signori C. Sella, L. and F. Allievi, and E. Martinori having failed), and the Majella (2,729 mètres) on February 6 by Signori Francesco Allievi and Enrico Abbate.

In the Eastern Alps a regular Alpine tour was made by two gentlemen from Graz with Johann Pinggera, of Gomagoi, the well-known guide. On December 31 this party reached the Königsjoch, but were compelled by a storm to return to Sulden. On January 3, at 7.30 A.M., they reached the Königspitze; on January 7, at 9 A.M., in brilliant weather, the Orteler Spitze (starting from the Payerhütte), and on January 8 the Monte Cevedale at 11 A.M.

In the Engadine two of our countrymen effected a more arduous expedition, the first winter ascent of the Piz Bernina.

We publish the account furnished by the Rev. C. E. B. Watson, A.C., from which it would appear that the travellers were less impressed by the difficulties of the night descent than were those who furnished the accounts of the expedition which have appeared in the N. Alpenpost of Zürich and other foreign papers.

‘On February 4 the ascent of Piz Bernina was successfully made, and as I am told it is the first ascent in winter, I send a brief record of the facts.

‘Mr. H. Parnell, brother of the Irish member, was the author of the expedition, and took as guides A. Colani and Christian Grass, son of the older guide of that name. As Hans Grass was away, I secured the services of old Christian Grass and Valentine Kessler; and Hans, son of old Christian Grass, and V. Kessler, who had been engaged as porters to the Boval hut, went at the request of the guides with us, on a separate rope, only stopping short of the arête.

‘Starting at 1.55 A.M. from the hut, we ascended by the W. of the great Morteratsch ice-fall, and emerged from it about 8 A.M. Mr. Parnell, who had had a cold on him for some time, was unfortunately here overtaken with sickness, and was obliged to abandon all idea of the arête. This I reached with my guides about 11.15 A.M., and after $\frac{1}{2}$ hr. halt, we gained the summit at 3.20 P.M.

‘Returning by the Bellavista route, and profiting by the steps of Mr. Parnell’s guides, who had decided to go back this way, we reached the plateau about 5.30 P.M., just as it was beginning to get dusk; and keeping along Mr. Parnell’s tracks, which young Christian Grass with praiseworthy forethought chipped in the spots where the snow was frozen, we reached the Festung about 10 P.M.

‘Mr. Parnell, it seems, had had considerable difficulty in getting down the first part of the Festung in the dark, for his lantern was broken and there was no moon, and we found him waiting here behind a low wall his guides had built, thinking it safer to wait for daylight.

‘Old Christian, however, after the side of the second lantern had been made good with paper, pioneered a way with the two porters, and then we started down, and to make a long story short, returning by Isola Pers, eventually reached the Boval hut at 4.45 A.M. on February 5.

‘The unanimous decision of the guides was, as far as I could make out, for the route by the ice-fall, but experience showed the Bellavista

route to be much the easiest, there having been so little snow this winter, and the weather being so clear and settled.

'The thermometer on our arrival at the Boval hut on February 3 registered, according to a guide, about 19 Fahr., and judging from my experience of the temperature at which the moustache freezes, at no time during the expedition did it, I think, fall much below 14 or 13 Fahr.

'As, having no moon, we depended much on our lanterns, and they failed us again and again at awkward times, I should like to ask if there is any special lantern recommended by the club, which is both easy to light and keep alight; for there are times when a good lantern is a matter hardly second in importance to the rope and the ice-axe.

'CECIL E. B. WATSON.'

Throughout the upper Alpine region the winter has been extraordinarily sunny and snowless. At Davos perpetual sunshine reigned, while the lowlands of N. Switzerland were under a roof of frozen fog. At Zermatt, and also in Dauphiné, the cattle have been able to remain out on the meadows instead of being confined to their stables. Many club huts, which last season were scarcely accessible till June, have been this year visited by guides in midwinter. The Simplon was open for wheel traffic on March 23! The first fatal accident to a traveller on a winter ascent took place on March 14 on the Schneeberg (2,059 mètres=6,756 feet) a summit not far from Semmering, on the railway of that name between Vienna and Graz. Herr Hermann Beyer, a member of the Touristen Club of Vienna, while descending to Buchberg, attempted to glissade, against the warnings of his companion, and losing his 'stock' and his balance, fell over some rocks and was killed instantaneously.

ASCENTS ROUND LEUKERBAD.—The following letter has been received from M. L. Dècle, A.C.—'I send you the list of several new expeditions I made last summer in the Bernese Alps around Leukerbad.

'*Rinderhorn. First Ascent by the E. Arête.*—M. Lionel Dècle, with a porter, made this ascent in a single day from Leukerbad. When the snow is in good order it is very easy. One should only take care not to walk too near the Leukerbad valley side, as a great snow cornice overhangs.

'*Ferden Rothhorn. First Ascent.*—M. Lionel Dècle, without guides, made this ascent. Starting from the Fluh Alp he followed at first the way up the Mutterstein, then keeping to the left, reached the summit by easy rocks and tracks of snow. Thence a very beautiful view of the Balmhorn and of the surrounding valleys is obtained.

'*Lämmernhorn. First Ascent.*—The Count of Castelbanc and M. Lionel Dècle, with a porter, made this ascent. Starting from the Gemmi they reached at first the Lämmern Glacier, and from thence climbed quite easily to the summit of the Lämmernhorn. They descended on the southern side by a small glacier, and passed on the Dauben Glacier. They climbed several little peaks overlooking the Leukerbad Valley and reached the top of the Daubenhorn, where they found Mr. Fox's flag. They reached the Lämmern Valley by the Dauben Glacier, and crossed the Gemmi to Leukerbad.

'Retzi Rothhorn. *First Ascent*.—Messrs. Donald Grant, of Dublin, and Lionel Dècle made this ascent *without guides*. Starting from Leukerbad they reached first the top of the Torrenthorn. Then turning to the left they descended on to the Maing Glacier, and went straight to the foot of the Retzi Rothhorn. They climbed by a couloir to the arête, which they followed to the top. They came down by the same way. When on the glacier they turned to the right, then passed near a little lake in the middle of the glacier, and crossed a col to the S. of the Mainghorn. Thence they reached the Dala Valley over the Mutterstein pass.'

THE 'HOCH WILD SPITZE,' OR 'HOHE WILDE,' OETZTHAL.—'During an excursion in the Oetzthal last August, my friend Mr. Gurney Smith and myself, with Johann Falkner and Martin Scheiber as guides, made the sixth ascent of this little-known peak; the fifth * having been made in 1876 by Mr. Craven and the late Dr. Mosceley.

'We left Gurgl (6,238 feet) at 2.50 A.M., reaching the summit at 9.30; halts 50 minutes. 2 hrs. 25 min. over grass alps, and skirting steepish slopes, moraine, &c., to the lower Langthaler Ferner, passing the Gaisberg and Rothmoos glaciers *en route*. Thence a 2½ hours walk up the glacier to the saddle forming the Langthaler Joch, overlooking the Pfeldersthal, from which valley (from Plan) the ascent would occupy probably 2 hours less time than from Gurgl.

'There being an unusual quantity of snow this season, the ascent of the glacier gave little trouble, the crevasses being well and securely covered, and the slope gradual till the upper ice-fall is reached. Here immense transverse crevasses required some circumventing to gain the saddle, from whence to the top is the real interest of the climb. Three-quarters of an hour to an hour suffice, and one has the choice of either rocks or snow, both very steep, almost a wall in places, but presenting no serious difficulty. We went up by the snow, with a little rock here and there, and down by the rocks, which form a rough and in some places rather rickety kind of stairway, though the foothold is for the most part good, if often of scant dimensions. Were the snow not too soft, as on this occasion, it would be the easiest way both up and down.

'We had heard much of the view, nor were we disappointed. The day was perfect and the scene magnificent, including the Dolomites, Ortler, Bernina, Silvretta, Stubai, Zillertal, Glockner, &c., &c., the valley of the Adige stretching far away south between the Dolomites and the Adamello-Prasanello group. Deep below lay the Pfeldersthal, and around us all the great Oetzthaler peaks and snow-fields. The Hohe Wilde is certainly second only to the Weiss Kugel, and its worthy rival, standing out like it a southern sentinel of this noble glacier mass, and like it commanding a view surpassed by few in the Alps.

* The peak was first ascended in 1858 by an Austrian officer surveying the district, again on July 25, 1862, by Herr J. J. Weilenmann of S. Gallen by way of the Elsjoch, and for the third time on July 20, 1874, by Dr. Theodor Petersen from Plan. (See *Zeitschrift des D. u. O. Alpenvereins*, vii. 184, 185). The fourth ascent was made by Messrs. T. Cox and F. Gardiner on September 11, 1875, in 12.25, up and down from Gurgl. (See *A. J.* vii. 329).—EDITOR.

'We received the hearty greetings of Herr Güber, the portly and jovial priest, on our return to Gurgl, at 3.50 P.M., after a most delightful excursion; the only drawback to which is the long distance to the foot of the peak proper; albeit the way lies up one of the noblest ice-streams in this group.

'Time, 5 hrs. 50 min. up, 50 min. rest; 4 hrs. down, 50 min. rest, and 1½ hr. enjoying the glorious scene on the summit.

'Three days later I ascended the Hintere Schwärze Spitze, also a grand peak.'—R. STARR.

THE DACHSTEIN GROUP.—Herr Robert von Lendenfeld writes from Graz:—'Being on the Committee of the "Section Graz des Deutschen und Oesterreichischen Alpen-Vereines," I take the liberty of troubling you with the following lines.

'In the north-western corner of Styria there is a group of mountains, the Dachstein group, which is very rarely visited by English climbers. Having spent some time in that group last year, it is in my power to recommend it fully to English mountaineers; not only are there several untrodden paths to be found, but some of the first ascents which I have made (e.g. Bischofsmütze, Thorstein from Windlegerscharte) are worthy of your attention. The guides on the south side of the Dachstein can compete with the greater number in Zermatt—at least in rockwork—and are as enterprising as skilful. If any mountaineers should come into the neighbourhood of Schladming, Aussee, or Hallstadt, they will certainly not repent spending some days of exercise in the Dachstein group.

'The best guides in the neighbourhood of Schladming are Steiner, Anhäuser, Mauthner, and Fischer.'

EXORCISING THE GLACIERS.—The following story, quoted by M. V. Payot in his work recently noticed (p. 442) from the 'Vie de Jean d'Aranthon d'Alex,' Bishop of Annecy from 1660 to 1695, published at Lyons, in 1767, will amuse our readers.

'Les habitants d'une paroisse appelée Chamounix montrèrent d'uno manière singulière la confiance qu'ils avaient en la bénédiction de leur évêque. Chamounix est frontière du pays de Vallay et elle a de grosses montagnes qui sont chargées de glaces et de neiges, aussi bien en esté qu'en hyver; leur hauteur semble porter leurs pointes jusque dans les nuës, et elles s'élèvent presqu'autant que la veste peut porter; ces glaces et ces néges, qui viennent toujours en penchant depuis la cime jusqu'en bas, menacent sans cesse de ruiner les lieux circonvoisins, et autant de fois que l'évêque allait faire sa visite en ces quartiers-là, les peuples le prièrent d'aller exorciser et bénir ces montagnes de glace. Environ cinq ans avant la mort de notre évêque, ces peuples lui firent une députation pour le prier de les aller voir encore une fois, dans la crainte qu'ils avaient que, devenant plus vieux de jour en jour, sa vieillesse ne les privast de ce bonheur; ils offraient, avec leur bonne foy, de faire tous les frais du voyage, et ils assuraient que, depuis sa dernière visite, les glaciers s'étoient retirés de plus de quatre-vingts pas. Le prélat, charmé de leur foy, leur répondit: *Ouy, mes bons amis, j'irays, quand je m'y devrois faire porter, pour joindre mes prières aux vostre.* Il y alla et fust reçu avec une joye qui correspondoit à

la foy de ces bonnes gens et à leur confiance à leur évêque, qui y fit ce qu'ils désiroient. J'ay une attestation faicte avec le serment des plus notables de ces lieux, par un acte public, dans lequel ils jurent que depuis la bénédiction donnée par Jean d'Aranthon, ces glaciers se sont retirées, de telle sorte qu'elles sont à présent éloignées d'un demy-quart de lieue du lieu où elles étoient avant la bénédiction, et qu'elles ont cessé de faire les ravages qu'elles faisoient auparavant.'

What would the Chamoniards of 1690 have thought, if they could have heard one of the prophets of the Nineteenth Century attributing a retreat of the glaciers to the wrath of the Deity!

We have to correct two mistakes in the final paragraph of our notice of M. Payot's pamphlet. For 'Tairraz' read Payot, and for 'September 1869' read September 1878.

AN ATTEMPT TO ASCEND MONTE ROSA, BY THE ITALIAN SIDE, IN THE EIGHTEENTH CENTURY.—Mons. C. Rabot writes as follows: 'Allow me to draw notice to an unknown attempt on Monte Rosa, from the Italian side, made at the end of the last century, certainly before 1788, by Count Morozzo. At that time there was at Turin, as at Geneva a little group of men of science, whom the passion for natural studies led to explore the Alps.

'Purposing to measure the height of the principal summits belonging to the Kingdom of Sardinia, Count Morozzo made two journeys in the Alps of which the "Mémoires de l'Académie Royale des Sciences de Turin" (Années 1788-1789, pp. 1-18), contain an account.* In his first excursion he visited Val Formazza, and much admired the falls of the Tosa, "peut-être la plus belle qu'il y ait en Europe." He climbed the "great glacier of Formazza" (Gries Gletscher), and turning to the right along the side of the mountain called Les Cornes, descended in two hours (by the Val Corno), to the chief source of the Ticino, which forms the Bedretto valley. The Gries Pass was frequented and upon the glacier the way was marked by stakes fixed at a distance of four to five toises. The second tour made by Morozzo was in Val Anzasca. "Ma seconde tournée fut dans la vallée Anzasca, à l'extrémité de laquelle on trouve la paroisse de Macognaga au pied du Mont Rose, qui se présente à l'ouest en tête de la vallée. J'ai même tenté de la gravir, mais j'avoue que je ne croyois pas l'entreprise aussi difficile. J'ai cependant monté le premier glacier d'où l'Anza tire sa source, et d'après une évaluation approchante, j'étois à 1500 toises [=2873 mètres or 9426 feet] d'élévation, mais mes guides m'assurant l'entreprise impossible, il a fallu y renoncer; de là ayant regardé la plus haute pointe de cette montagne, la hauteur m'a paru bien grande encore et je crois même qu'elle égale celle du Mont Blanc." He adds in a note:—"J'ai communiqué à M. de Saussure les remarques que j'ai faites sur cette montagne, qu'il se proposoit de gravir cette année."

INN NEAR THE GLACIER D'ARGENTIÈRE.—Two of the Tourniers of Chamonix propose to open, for the coming summer, a small 'Pavillon' or inn by the side of the Glacier d'Argentière, in a position corre-

* Sur la mesure des principaux points des Etats du Roi, et de leur véritable élévation au-dessus du niveau de la mer.

sponding to that of the Montenvers to the Mer de Glace. If fairly kept it will be useful to mountaineers crossing the Col d'Argentière, or attempting any of the numerous ascents in this part of the chain, while it may suggest to a few of the less sheeplike tourists that there are more than two glaciers near Chamonix, and that Mont Blanc is not the only ice expedition suited to poor climbers.

Those who love the beauties of the snow world cannot do better than follow Mr. Reilly's advice and cross the A. des Grands Montets from the Montenvers to the new 'Pavillon.' If on the next day they go by the Fenêtre de Saléna to the Col de Balme, they will know something of one end at least of the chain of Mont Blanc.

NOTES ON INNS IN THE COTTIAN AND MARITIME ALPS.—Mr. Coolidge writes :—With the hope of assisting members of the Club who may propose exploring these parts of the Alps next summer, I have jotted down a few notes on inns which I visited in 1879. The standard by which they are judged is that of a mountaineer able to rough it in some degree, and willing to dispense with comforts and luxuries, provided he can get a clean bed and tolerable food. As a rule, the inns mentioned are distinctly better than *most* of those in Dauphiné.

Guillestre.—I stopped on two occasions last summer at the Hôtel Imbert. It is a very fair country inn, and the prices are moderate. The host is most obliging, and can give much useful information.

Abriès.—At the recommendation of my friend, Mr. Paul Guillemin, I went to the inn kept by the sisters Richard, and was received most hospitably. The accommodation is very fair and the prices extremely moderate, my bill for two nights and provisions for the ascent of Monte Viso being under 2*l.*! Nothing could exceed the kindness of the hostesses on the occasion of a slight indisposition by which I was attacked. Abriès itself is rather far from the foot of Monte Viso, but a hut, known as the 'Refuge des Lyonnais,' about 3½ or 4 hrs. from Abriès, on the right bank of the Guil, has been fitted up for mountaineers by the French Alpine Club, part of it being inhabited during the summer by a shepherd who can provide polenta, milk, and bread.

Escreins.—A lonely hamlet (not mentioned by Mr. Ball) 2¼ hrs. from Guillestre: there is no inn, but black bread and poor cheese can be obtained at one of the houses at a nominal price.

Oulx.—The spot where the road from Briançon over the Mont Genève joins the railway between Turin and Bardonnèche. A new inn (Grande Albergo di Bologna) was opened last summer opposite the railway station, where fair Italian accommodation is to be had at reasonable prices.

Maljasset.—The highest hamlet in the valley of the Ubaye, in the midst of a little known but most interesting group of mountains. We stopped for a week at the auberge chez Martréi, at the upper end of the village. The accommodation was rather rough, but the food, as far as it went, tolerable. Prices not unreasonable. When the district is more visited things will no doubt improve.

S. Paul-sur-Ubaye.—A large village in the valley of the Ubaye, the starting point for the Brec de Chambeyron, and for passes leading to Guillestre, Embrun, Larche, and the Val Maira. I can most warmly

recommend the Hôtel Hellion as an excellent country inn. Prices reasonable.

Barcelonnette.—A small town on the Ubaye, the starting point for the Col de l'Argentière or della Maddalena, now traversed, I believe, in its whole length by a carriage road. The Hôtel du Nord (chez Martel) on the 'Place' is excellent, and prices moderate, despite the remote position of this little town, the 'little Barcelona.' There is a section of the Club Alpin Français here, by the members of which I was received most courteously.

Castel Delfino or *Château Dauphin*.—At the head of Val Varaita, the usual starting point for the ascent of Monte Viso. I was detained several days here by indisposition, at the Albergo di Francia, a thoroughly Italian inn, kept by Lorenzo Richard. The food was not remarkably good, and the prices not very low. The hostess is well-meaning, but fussy and rather flighty.

Prazzo.—A picturesquely-situated village in the Val Maira. At the Scudo di Francia, we found tolerable accommodation for the night, combined with absurdly low prices.

Pradlèves.—In the beautiful Val Grana. The 'Albergo dell'Angelo,' kept by the Fratelli Molineri, near the bridge at the lower end of the village, is the most charming little inn in the valleys round Monte Viso. Accommodation good (the trout especially commended), and prices not unreasonable. I am at a loss to understand how this inn can pay its way, as travellers (except Count Paul de Saint Robert) have entirely passed over this valley, and the devotees of the sanctuary of San Magno, higher up the valley, can scarcely be numerous enough to support it. The whole valley below Pradlèves is extremely picturesque and finely wooded, while the miniature gorge leading from Pradlèves to Castelmagno (a hamlet clinging to the steep hill side) is one of the loveliest sights I have ever seen.

Demonte.—At the entrance of the Val Stura. The 'Albergo Garibaldi' furnished tolerable quarters for the night at very reasonable prices.

Valdieri.—A village half-way between Cuneo and the Bagni di Valdieri. The 'Corona Grossa' is a typical Italian inn; the accommodation might be much worse, and the prices are fair.

Bagni di Valdieri.—A fashionable watering-place at the foot of the highest ranges of the Maritime Alps. There is no village, but one great stone building (the Stabilimento), several ornamental chalets for hire, and the bath-houses. The Stabilimento can take in 300 persons and is furnished with a very large dining-room, also a concert-room, &c. An arcade under which are the café and various bureaux and shops runs along the entire front of 300 feet. The Stabilimento is open from the end of June to September 1. The prices for rooms, déjeuner à la fourchette (at 10 A.M.), dinner (at 5 P.M.), lights and service, vary according to the floor—12 francs (1st floor); 10 francs (2nd floor); 9½ francs (3rd floor). Servants 6 francs a day. There are hot and cold mineral springs, and great use is made of a curious plant called 'Muffa,' which is applied in strips to the body, and is said to be very efficacious in certain maladies, but many of the guests

(almost exclusively Italian) come to the Bagni simply as a 'Sommerfrisch.' I was a week at Valdieri, and was not altogether satisfied with the accommodation, for which the prices seemed to me rather high, while it is impossible to start for any mountain excursion before 5 A.M. It is, however, by far the best and most central head-quarters in the Maritime Alps.

Col di Tenda.—The 'refuge' within 2 min. of the top of this pass offers rough quarters at moderate prices. The sunrise from the pass is a most beautiful sight.

San Dalmazzo di Tenda.—An old monastery, now turned into a hydropathic establishment, a little way beyond the French frontier, on the Italian side. The cloisters, monks' cells, and quadrangle, are all perfect and applied to modern purposes; and there is a spacious and well-shaded garden reaching down to the banks of the Roya torrent. The accommodation is good, but the prices (at least for passing travellers) rather high. The neighbourhood is extremely picturesque, but the heat is great in summer. The inn is open from May 15 to October 15, and would be very pleasant in spring or in autumn.* The diligences to and from Nice and Cuneo pass the door daily. S. Dalmazzo is the best spot from whence to visit the mysterious rock drawings near the Laghi delle Meraviglie, at the head of the Val della Miniera, or Vallauria. At the village of Tenda, 4 kilomètres higher up (45 min. walk), there are several poor-looking inns, and a mere fragment of the castle of the unhappy Beatrice di Tenda.

La Maddalena.—A group of houses in the Valmasca, which opens out into the Roya valley at S. Dalmazzo. We were hospitably taken in and entertained when overtaken by darkness, at a solitary cottage on the right bank of the torrent, near a whitewashed building at the lower end of a small plain (? ancient lake bed). Chûlet fare and nominal prices.

Murajon.—A solitary chûlet, near the head of the Val di Mont Colomb, above Entraque, where we found shelter for the night, after the ascent of the Cima del Gelas. The herdsmen were very inquisitive, but very civil, and highly pleased with three francs.

S. Martin Lantosque.—A summer resort of the inhabitants of Nice, with which it is connected by a good carriage road. I stopped two days at the 'Hôtel des Alpes' (chez Tardey), where I found good accommodation at not unreasonable prices. There is also a 'Pension Anglo-Américaine.' At the Cascade de la Ceriegia, 1½ hr. off, there is a small inn now open, of which I heard favourable accounts.

Madonna di Finestre.—A place of pilgrimage, 3 hrs. from S. Martin Lantosque. Next to the church there is a fair little mountain inn for the pilgrims and those coming over the Col di Finestre. Prices moderate. Best starting point for the Cima del Gelas and neighbouring ranges.

Isola.—A village on the Tinée, at the foot of Mont Mounier. I was well satisfied with our quarters at the 'Hôtel de Paris' (chez Taxil). Prices remarkably low. The wife of the host is a German-Swiss.

* A pleasant description of the environs is to be found in an article in the *New Quarterly Magazine* for January 1878.

Roja.—A little hamlet, where we slept for the Mont Mounier, up a very picturesque side glen of the Tinée. The 'auberge' (chez Marcelin Possini) could not offer more than châlet fare, and a truss of straw in the barn, but the people were obliging, and the prices almost nominal.

S. Etienne.—Near the head of the Tinée valley. Excellent little inn (chez Gauthier), and prices most reasonable; one of the best stopping places in the Maritime Alps. An easy pass connects this village with Barcelonnette, and a good mule path leads down to Isola.

Esteng.—A hamlet near the source of the Var. At an isolated farmhouse, near a small chapel, some way above the rest of the village, we were well received. Unfortunately the food was not much, beds were replaced by a roomy barn, and the people only spoke Provençal.

Allos.—A large village on a hill, quite a typical Gaulish hill fort, near the head of the Verdon torrent. It is connected with Colmars and Castellane by a good carriage road, and with Barcelonnette by a good mule track, which ultimately expands into a carriage road. The inn (chez Pascal) is bearable, but the prices asked exorbitant.

W. A. B. COOLIDGE.

MR. GOSSET'S SURVEY OF THE RHONE GLACIER.—The Editor has received the following note:—"Dear Sir,—In Mr. Cust's paper on Mr. Gosset's "Survey of the Rhone Glacier,"* I find the following words: "The S. A. Club, after first undertaking its sole support, finally requested Mr. Gosset to let them off. He did so at once." As this statement does not agree with the facts of the case, and is adapted to place the conduct of the Swiss Alpine Club in an unfavourable light, I take the liberty of informing you of what actually occurred.

'It is correct that, in the early stages of the Survey, difficulties and misunderstandings arose between Mr. Gosset and the Central Committee of the S. A. C., in consequence of which, after prolonged negotiations, the Central Committee placed the sum of 13,500 francs at the disposal of Mr. Gosset, subject to certain conditions, based on the agreement concluded between the S. A. C. and the Federal Ordnance Office, which it would take too long to explain in this place. With reference to this offer, Mr. Gosset declared, in a letter dated January 17, 1877, that he wished to remain sole owner of the results of his undertaking, and consequently declined the sum of 13,500 francs which Herr Freundler, the then President of the Central Committee of the S. A. C., had proposed to hand over to him in order to cover the expenses to which he had been put. May I ask you to have the kindness to insert this correction in the next number of the "Alpine Journal?" I remain, dear Sir, yours obediently, R. LINDT,

'President of the Central Committee of the S. A. C.'

FIRE AT NAUDERS.—This important village, well known to Tyrolese travellers, was on the night of the 3rd-4th March almost totally destroyed by fire. Mr. F. F. Tuckett kindly took on himself the trouble of raising a subscription in England for the sufferers, and has been able to forward to Parrer Senn the sum of 68*l.* 11*s.*, collected chiefly amongst members of the Alpine Club. The subscription is now closed.

* *Alpine Journal*, No. 67, p. 435.

REVIEW.

RORAIMA.*

Some of our readers may recollect that in 1877 Mr. Barrington Brown, in an interesting book of travel, made known to the world that there exists on the confines of British Guiana a mysterious mountain, by name 'Roraima,' which has a high reputation for inaccessibility. We have now to speak of the work of a gentleman, who, stimulated by the perusal of Mr. Brown's book, made in 1878 a special journey to South America for the purpose of scaling Roraima, although we regret to say he is not a member of our Club.

Mr. Boddam-Whetham, starting from New York, reached British Guiana by way of the Bermudas and West Indies, the beauties of which, yet unknown to touristdom, he describes with the utmost enthusiasm. On his arrival at Georgetown, he luckily discovered that a Government expedition was about to start for Roraima, with the intention of attempting its ascent. Mr. Boddam-Whetham obtained permission to form one of the party, and accordingly started on February 23, 1878, in company with Mr. McTurk, an experienced Government official, and fifteen Indians. By means of two boats and a strong canoe they were able to convey provisions sufficient for several months. We must pass over the many incidents of the voyage up the great river Mazaruni, merely remarking that the river scenery seems to be of the first order, and the vegetation of a thoroughly tropical kind.

Mr. Boddam-Whetham thus describes the first glimpse of Roraima (which is pronounced Roreema: cf. page 219, note). 'The sun was fiercely bright when, after an early start from our camp on the Marika, our straggling party issued one by one from the dark shady forest on to an open savanna. A glad shout from the foremost announced that our goal was in sight. Hastening up an intercepting hill we looked down on an undulating savanna country, streaked here and there with forest belts. On our right towards the north, were the craggy heights of Marima; on our left, beyond the terraced side of Waëtipu, the table-land faded away in the silver-blue mountains of Brazil; and in front of us, walled round with rocks, as an inland island, stood Roraima. At the foot of the mountain, the hilly ground lay in patches of yellow stony savanna, and dark strips of woodland rising in elevation as they approached its base. Then came a deep forest-clad ravine whose farther side sloped steeply up to a distance of about 3,000 feet, and, springing out of this sea of green rose a perpendicular wall of red rock, 1,500 feet in height. Hardly a shrub broke the sheer descent of the shining cliff, scarcely a line of verdure marked where clinging grasses had gained a footing on its smooth face. The south-eastern corner was slightly rounded, and its tower-like appearance increased its general resemblance to a Titanic fortification, a few miles in length, rising from a forest glacis. The glancing rays of the sun struck the red sandstone layers, which shone

* *Roraima and British Guiana*, by J. W. Boddam-Whetham. Hurst and Blackett. 1879.

like glass and stood out in bold and bright relief above their green base. A fly could hardly have rested on the slippery slabs, and this was the mountain we had come so far to scale! The level summit-line was backed by forest trees, which to us appeared like bushes, and from their feet, like skeins of floss silk swaying in the wind, three waterfalls descended, and were lost in the woods below. But towards the northern end of the mountain, a magnificent cascade, whose lip seemed to be below the summit, sprang in a broad silvery arch right down into the green depths, barely touching the rocky wall in its descent.'

The height of this splendid peak is about 8,000 feet above the sea, or 4,500 feet above the table-land from which it rises. The frontispiece gives a view of Roraima, which recalls one of the *Mont Aiguille* in Dauphiné, given in the '*Annuaire du Club Alpin Français*,' 1876, p. 585. The *Mont Aiguille*, though first climbed in 1492, and several times since, had a high reputation for inaccessibility, until Mr. Edouard Rochat's ascent in 1877.* Roraima, however, as we shall see, has not yet found its conqueror. As the northern side, which, as seen from the direction from which Mr. Boddam-Whetham and his party approached the peak, seemed hopeless, they resolved to explore the eastern side, but the prospect was not more cheerful. 'Nothing less than a Pegasus could expect to reach the summit of the bare red wall that raised itself for hundreds and hundreds of feet, unrelieved by aught save a few tangled bushes and tasselled bunches of some wild grasses. Carefully we scanned every ledge and crevice, seeking some practicable spot to which we might direct our steps on the morrow. At the southern extremity of the eastern side, which we were facing, a ravine near a rounded tower-like rock, draped with grass and lichens, which recalled to my mind the *Metella Tomb* of the Roman *Campagna* on a gigantic scale, gave a better promise of a foothold than anywhere else. But a closer examination showed that this fissure only separated the rounded mass, at about two-thirds of its height, from the rest of the mountain, which then rose as perpendicularly as in other places. The following day when we resumed our explorations, the results were similar. Near one of the falls an angle in the rock, and a fringe of shrubs running up for some distance along a deep crack, held out hopes of a practicable ascent, but they vanished in a plumb-line of wall without ridge or chink.' An examination of the southern side did not raise their hopes of success, this side being, if possible, even more precipitous than the eastern. They were prevented by want of provisions, &c., from undertaking a long journey through a virgin forest, to gain a view of the western side, and both the author and McTurk were inclined to agree with the natives that the ascent was impracticable, though Mr. Boddam-Whetham suggests that it might be effected in a balloon, adding that the novelty of such a tour would give fresh zest to the undertaking. They were therefore compelled to return to Georgetown after an absence of two months.

It does not appear that any member of the party had had any previous experience in mountaineering, and their failure ought not

* *Annuaire du Club Alpin Français*, 1877, p. 248.

therefore to discourage others from trying their luck. We would suggest to any adventurous member of our Club who sighs for fresh conquests, that here is the opportunity for which he has been waiting, of distinguishing himself, and securing fresh laurels for his Club. Mr. Boddam-Whetham's book may be warmly recommended to all who wish to gain an idea of what the West Indian Islands are like, and his account of the little known state of Venezuela (or Little Venice) is extremely interesting.

W. A. B. C.

ALPINE BIBLIOGRAPHY 1878-1879.—The following lists have been kindly furnished by Mr. W. A. B. Coolidge:—

I. *Alpine Periodicals, Transactions of Alpine Clubs, etc.*

Allgemeine Deutsche Touristen-Zeitung. Appears fortnightly at Frankfurt-am-Mein under direction of the Taunus Club. 1879.

Alpen-Freund, der. Redigirt von Ed. Amthor. xi. 1-6. 1878. (Extinct).

Alpine Journal, vol. ix., 1878-1880. London: Longmans.

Appalachia, organ of the Appalachian Mountains Club. Boston, U.S.A. No. 1, June 1876. No. 2, March 1877. No. 3, June 1877. No. 4, February 1878.

Carinthia, 1878, 1879. Klagenfurt. Twelve numbers a year.

Club Alpin Français. Annuaire iv. 1878; v. 1879. Paris.

————— Bulletin Trimestriel, 1878, 1879. Four numbers a year. Paris.

Publications of Sections of C. A. F.

Auvergne. Bulletin 1, 1877; 2, 1878; 3, 1879.

————— *Récit d'une Ascension au Pic de Belledonne.* Par J. Queyrat.

Basses-Alpes. Album photographique de la vallée de Barcelonnette. 1879.

Briançon. Album du Briançonnais. 102 vues photographiques, 1878-1880.

Côte d'Or et Morvan. Bulet. 1, 1877.

Isère. Bulletin 2, 1878.

Jura. Bulet. 4. Jan. 1877. 5. July 1877. 6. May 1878.

Lyon. Bulletin 1. Jan. 1878. 2. July 1879.

Maurienne. Magnin, B. N.: *Récit d'une ascension aux Aiguilles d'Arres*, 3,600 m., le 2 Septembre 1839. Vuilliermet, S. Jean de Maurienne.

Saône et Loire. Bulet. 2. 1877. 3 & 4. 1878.

Sud-Ouest. Bulet. 1. July 1877. 2. Jan. 1878. 3. July 1878. 4. Jan. 1879. 5. 1879. 6. 1879.

Club Alpino di Garfagnana. Bollettino 1. 1879.

Club Alpino Italiano. Bollettino Trimestrale. Nos. 33, 34, 35, 36 (1878). Nos. 37, 38, 39, 40 (1879). Turin.

Publications of Sections.

Osservazioni meteorologiche fatte nelle Stazioni Italiane presso gli Alpi e gli Apennini, e pubblicate per cura del C. A. I. VII. 10. Sept. 1878. 11. October 1878.

Agordo: *Adunanza straordinaria del 1 Sett.* 1878, nella valle di San Lucano. Belluno, 1878.

Biella: *Guida per gite ed escursioni nel Biellese.* Biella, Amosso, 1878.

Florence: *Scritti rari di Argomento attenente all'Alpinismo Locale.* Anno 1, 1878. Anno 2, 1879. Florence.

Il Pisano ed il Pizzo d'Uccello (Alpi Apvane). Florence, 1876.

Marchigiana: *Al Vettore, Osservazioni e Studi.* Ancona, 1879.

Susa: *Carta e Tavole altimetriche della valle di Susa.* 1878. Per C. Balbo. Bollettino 1, 1879.

Tolmezzo: *Dal Peralba al Canino.* Udine, 1877.

- Verbanò : Bollettino, 1877-8, 1878-9. Intra.
 Vicenza : Bollettino 3, 1878. 4, 1879.
 Sassari : *Gita inaugurale al Castello d'Osilo*. Sassari, 1879.
 ——— *Escursione al Campo Mela, Saccargia, Nuraghi, Nieddu, Ploaghe, Vulcano, San Matteo*. Sassari, 1879.
Club Jurassien. Le Rambeau de Sâpin. 12^{me} année, 1878. 13^{me} année, 1879. 12 numbers a year. Neuchâtel.
Deutsche u. Oesterröichische Alpenvereïn, dor. Zeitschrift. 1878, Hefte 1-3. 1879, Hefte 1-3. Vienna.
 ——— *Mittheilungen* 1878, Hefte 1-6. 1879, Hefte 1 6. Vienna.
 Both edited by Th. Trautwein.
 ——— *Beilage zur Zeitschrift. Anleitung zu wissenschaftlichen Beobachtungen auf Alpenreisen*.
 Erste Abtheilung : *Orographie u. Topographie, Hydrographie, Gletscherwesen*. Von C. von Sonklar.
Kurze Anleitung zu geologischen Beobachtungen in den Alpen. Von C. W. Gümbel.
 Zweite Abtheilung : *Einführung in die Meteorologie der Alpen*. Von J. Hann.
Fichtelgebirge, Führer durch das. Bearbeitet von dem Vorstande des D. u. Ö. Alpenvereïns. Section Fichtelgebirge. Wunsiedel, 1879
Echo des Alpes : publication des Sections Romandes du Club Alpin Suisse. Numéros 1-4, 1878. Numéros 1-4, 1879. Genève.
Neue Alpenpost. Edited by Binder and Grob. Zürich, vols. 7, 8, 1878; vols. 9, 10, 1879, Each volume contains 26 numbers.
Neue Deutsche Alpenzeitung. Edited by R. Issler. 1878 (vols. 6, 7); 1879 (vols. 8, 9).
Oesterröichische Alpenzeitung. Edited by Julius Meurer. Vienna, 1879 (vol. 1). 26 numbers.
Oesterröichischer Touristenklub. Jahrbuch ix. (1878); x. (1879). Vienna.
Pamiętnik Towarzystwa Tatrzauskiego. (Tatry, or Polish Alpine Club.) II. Rok. 1877. III. Rok. 1878. IV. Rok. 1879. Cracow.
Schweizer Alpenclub. Jahrbuch xiii. (1877-8); xiv. (1878-9). Bern.
Società degli Alpinisti Tridentini. Annuario, 1877. Milan, 1878. 1878-9. Borgo, 1879.
Società des Touristes du Dauphiné. Annuaire iii. 1877; iv. 1878. Grenoble.
Société Ramond. Bulletin. Explorations Pyrénéennes. 3^{me} série, 1878. Nos. 1-4. 1879, Nos. 1-4.
Steirisches Gebirgsvereïn, Jahrbuch des. vi. 1878; vii. 1879. Graz.
Tauern-club. Jahrbuch, or Zeitschrift. vii. 1879. Frankfurt-am-Mein.
Ungarischen Karpathenvereïn, Jahrbuch des. v. (1878); vi. (1879). Késmárk.
Vogesen-Klub. 1877-8. 1879. Strassburg.
Wilde Banda. 1879. Vienna.

II. Books, Pamphlets, and Articles relating to the Alps.

- Album d'un Alpinista*. Biella, Amosso. 1^o quaderno. A Gressoney per val d'Andorno. 1877. 2^o quaderno. In Valsesia, 1878.
Ammersee, dor. und seine Umgebung. Mit einer topographisch-historischen Karte und Panorama des Gebirges von Diessen aus. Landsberg a. L. Verza, 1878.
 Anthon, Ed.: *Tiroler Führer. Reisehandbuch für Deutsch- und Wälsch-tirol, unter Berücksichtigung der angrenzenden Gebietstheile des bayerischen Hochlands, Vorarlbergs, Salzburgs, Kärntens, Oberitaliens und der Schweiz, und mit einer kurzen Beschreibung Münchens. Mit Kunstbeilagen (23 Stadtpläne, Karten, und Panoramen)*. 4. Auflage. Gera, Amthor, 1878.
 ——— *Bozen und Umgebung*. Mit Umgebungskarte und Stadtplan. 2. Auflage. Gera, Amthor, 1879.
Anleitung zu wissenschaftlichen Beobachtungen auf Alpenreisen. (See under publications of 'Deutscher u. Oesterr. Alpenverein'.)

- Aus dem Leben eines Gletscherführers.*
 Babeno, Cav. Aronne: *I Club Alpini e le foreste. Studi economici legislativi.* Torino, 1877.
- Bädcker, K.: *Sritzerland and the adjacent Portions of Italy, Savoy, and Tyrol.* 8th edit. Leipzig, 1879.
- *Eastern Alps, including the Bararian Highlands.* 4th edit. Leipzig, 1879.
- Baretti, Martino: *Sui rilvramenti geologici fatti nelle Alpe Piemontese durante la campagna 1877.*
 ————— *Studi geologici sul gruppo del Gran Paradiso.* 1877.
 ————— *Studi geologici sulle Alpi Graie settentrionali.* 1879.
 (All three extracted from 'Memorie della Classe di Scienze fisiche, matematiche e naturali della R. Accademia dei Lincei in Roma.')
- Balbo, C.: *Turole altimetriche della valle di Susa.* Susa, 1878.
- Bayle, l'Abbé: *Guide de l'Oisans, ou Sept Jours à travers les Alpes du Dauphiné.*
Beiträge zur geologischen Karte der Schweiz. Lieferungen, 13, 16. Bern, Dalp, 1878.
- Bellucci, Giuseppe: *Itinerario della Basilicata.* Potenza, 1879.
- Bennett, A. W.: *Alpine Plants painted from Nature, by J. Seboth.* Edited by A. W. B. Vol. i. London, Swan & Allen, 1879. (See German original, under Seboth, Jos.)
- Berlepsch, H. A.: *Die Schweiz, nebst Chamounix, Veltlin und den italienischen Seen.* Dritte Auflage. Zürich, Schmidt.
- Bétha, le Chanoine: *Val Grisanche. Notices Historiques.* Mensio, Aoste, 1877.
- Bibliographie und literarische Chronik der Schweiz.* 12 numbers a year. Basel, Georg.
- Blanc, Ed.: *Etude sur les Sculptures préhistoriques du val d'Enfer, près des Lacs des Merceilles.* Vidal, Cannes, 1878.
- Bodlam-Whetham, J. W.: *Roraima and British Guiana.* Hurst & Blackett. London, 1879.
- Botanique pratique. Choix de plantes de l'Europe centrale, et particulièrement de la Suisse et de la Savoie.* Séries i. et ii. F. Richard, Genève, 1878.
- Bouvier, L.: *De Sausure, sa vie, ses ouvrages, et ses observations dans les Alpes.* Grosset et Trembley, Genève, 1878.
- Bonnefoy, J. A.: *Le Prieuré de Chamonix. Documents relatifs au Prieuré et à la vallée de Chamonix, recueillis par J. A. B.* Publiés et annotés par A. Perrin. Vol. i. A. Perrin. Chambéry, 1879.
- Bruno, L.: *I terreni costituenti l'anfiteatro allo sbocco della Dorea Baltea.* Curbis, Ivrea, 1877.
- *La misura delle altezze mediante il barometro e l'aneroide.* Curbis, Ivrea, 1878.
- Borgna, G.: *Crissolo e i suoi dintorni* (reprint from 'Il Monte Rosa' of Varallo).
- Bossoli, F. E.: *Dell' Equipaggio del viaggiatore alpinista.* Milan, 1879.
- Brosien, Hermann: *Die Alpenvereine* (in Meyer's Conversations-Lexikon, Jahres-Supplement, 1878-9. Leipzig).
- Buffa, Vincenzo: *Un Ora sul Monviso.* Mascarelli. Pinerolo, 1876.
 ————— *Per la Valle del Chisone.* Mascarelli. Pinerolo, 1877.
 ————— *Per le Valli del Pellice e della Germanasca.* Mascarelli. Pinerolo, 1877.
- and E. Rostan: *Guide delle Alpi Cozie (distretto del Viso; distretto Valdeser).* Per John Ball. Traduzione di R. E. Budden. Con note ed aggiunte dei Signori B. e R. Mascarelli. Pinerolo, 1879.
- Buck, Jos.: *Algäu, Lechtal und Bregenzwald. Handbuch für Reisende.* Dritte Auflage mit Bergprofilen, Panorama u. Karte. Kempten. Dannheimer, 1878.
- Burnat, Emile, et Aug. Gremlé: *Les Roses des Alpes Maritimes.* Georg. Genève et Bâle, 1879.

- Buss, E.: *Das Bergleben in religiöser Beleuchtung. Zur Erinnerung an die Lenk.* Bern, Dalp, 1878.
- Cafilisch, F.: *Escursions-Flora für das südöstliche Deutschland.* Lampart, Augsburg, 1878.
- Cainer, Scipio: *Un Alpinista a Chiampo.* Vicenza, 1877.
- Caldagno, Conte F.: *Ri-relazione delle Alpi Vicentine, e di Pardi e di Popolo loro.* Reprint, with introduction by Fratelli Rossi. Prosperini, Padova, 1877.
- Carandini, F.: *Una salita al Cimone e una visita all'Abetone.* 1877.
- Carega di Murice, Marchese F.: *Un Estate a Cutigliano. Escursioni e asconzioni nell'alto Appennino Pistoiese.* Nicolai. Pistoia, 1878.
- *Pagine Alpine.* Pistoia, 1879.
- *Alpinismo del 1879.* 1880.
- Chabory Bertrand, L.: *Guide complet du promeneur au Mont Dore et à la Bourboule.* Allier, Grenoble, 1877.
- Chabrand, Mdlle. A. J., and A. de Rochas-d'Aiglun: *Patois des Alpes Cottiennes.* Paris, 1878. (Extrait du *Spectateur Militaire.*)
- Chabrand, *Les Refuges Napoléon dans les Hautes Alpes.*
- Christ, H.: *Das Pflanzenleben der Schweiz.* Zürich, 1879.
- Christofori, F.: *Ricordo di una Escursione sugli Apennini.* Bologna, 1879.
- Cirimele, V.: *Da Catanzaro all'Etna.* Catanzaro, 1879.
- Corapi, L.: *Al Monte Tiriolo.* Catanzaro, 1879.
- Corona, Gaetano: *Sulle Alpi.*
- *Aria di Monti. Capaccini e Ripamonti.* Roma, 1879.
- Corti, E.: *Strenna per gli Alpinisti ed amatori di viaggi. Ricordi di un viaggio pedestre da Lodi a S. Moriz in Engadina.* Lodi, 1879.
- Daimer, Dr.: *Tauferer und Umgebung.* Amthor, Gera, 1879.
- Davos, die Landschaft. Climaticher Curort für Brustkranke.* Orell, Füssli u. Co., Zürich.
- Davos-Platz. By One who knows it well.* London. Stanford.
- Dell'Oro, Luigi: *Ascensione al Monte Bianco per il versante italiano e discesa per il versante francese nell'Agosto del 1875.* Tip. Lombarda. Milano.
- Descoetes, F.: *Trois Jours en Savoie.* Ancecy, 1877.
- Deutsche u. Oesterreichische Alpenverein, der: *Ein Blick auf seine Ziele u. seine bisherigen Leistungen.* Graz, 1879.
- Dufour, Th.: *William Windham et Pierre Martel—relations de leurs deux voyages aux Glacières de Chamoni.* Text original français. Julien, Genève, 1879. (Reprinted from 'Echo des Alpes,' 1879.)
- Duftscheid, Joh.: *Die Flora um Oberösterreich.* 2 B. 2 Heft. Linz, 1878.
- Favre: *Louis Agassiz.* Neuchâtel, 1878.
- Ferrand, Henri: *Excursions autour de Grenoble.* Maisonville, Grenoble. I. La Dent de Crolles: la Grande Lance. II. Le Villard de Lans, la Pyramide des Sept Laux, le Grand Charnier. 1877.
- *La Vaudaine. Etude sur le vallon de la Vaux-Daine (vallée damnata) et excursion aux pics qui la dominent.* Imprim. Dauphin et Dupont, Grenoble, 1878.
- *Itinéraire descriptif, historique, et archéologique de la Maurienne et de la Tarentaise, avec une carte et plusieurs illustrations.* Imprim. Dauphin et Dupont. Grenoble, 1879.
- Fichtelgebirge, Führer durch das.* (See Publications of Deutsch u. Oesterr-Alpenverein.)
- Filhol, E., E. Jeanbernat, and E. Timbal-Laglave: *Exploration scientifique du massif d'Arbas (Haute-Garonne).* Douladoure, Toulouse, 1876. (Extrait du *Bulletin des sciences physiques et naturelles de Toulouse.*)
- Flora Alpina.* 6. Blatt *Alpenblumen-Vorlagen.* Farbendruck. Von E. Vouga, 2. Heft. Genf, 1878.
- Frauberger und Marzroth: *Das Miesenbacherthal und Friedrich Gauer-mann.*
- Fritz, H.: *Die periodische Längeänderungen der Gletscher.* (Petermann: *Mittheilungen.* No 10, 1878.)
- Führer auf der Kronprinz Rudolf-Bahn von der Donau bis Laibach. Nach*

- Gustav Jägers nachgelassenem Manuscript bearbeitet. Von J. K. Beer. Verlag von Jäger's Tourist. Vienna.
- Georg, H.: *Bibliotheca Alpina tertia*. Troisième collection d'ouvrages anciens et modernes spécialement sur les Alpes. Basel, Georg, 1878.
- Girtanner, Dr. A.: *Der Alpensteinbock (Capra Ibx L.) mit besonderer Berücksichtigung der letzten Steinwild Kolonie in den Grauen Alpen*. Lintz, Trier, 1878.
- Giusti, G.: *Guida alpina di Ball per lo Alpe Lombarda e l'Adamello*. Verona, 1878.
- Gremli, A.: *Excursions-Flora sur die Schweiz, nach der analytischen Methode bearbeitet*. 3. Auflage. Christen, Aarau.
- Gorret, Amé: *Victor Emmanuel sur les Alpes. Notices et Souvenirs, ornés de croquis, d'un portrait en photographie, et d'une carte*. 2^{me} édition. Turin, Casanova, 1879.
- Gourdault, Jules: *La Suisse, études et voyages à travers les 22 Cantons*. 2 volumes, with numerous illustrations. Hachette. Paris.
- Grohman, W. A. Baillie: *Gaddings with a Primitive People, being a series of sketches of alpine life and customs*. 2 vols. London, 1878.
- Grube, A. W.: *Aus der Alpenwelt der Schweiz*. 2. Auflage. Stuttgart.
- Guillaume, P.: *La station préhistorique de panacelle et les peuples anciens du bassin de Guillestro*. Férét, Bordeaux.
- Guillemin, P.: *La Muraille nord du Viso*. (Revue Lyonnaise de Géographie. Novembre 8, 1877.)
- Gümbel, C. W. (See Publications of D. u. Oesterr. Alpenverein.)
- Haller, Albrecht: *Denkschrift*. Bern, Haller, 1877.
- Hann, J. (See Publications of D. u. Oesterr. Alpenverein.)
- Heer, D.: *Die Urvwelt der Schweiz*. 2. Auflage. Zürich, Schulthess, 1879.
- Same work, translated and edited by James Heywood. 2 vols, with 560 illustrations and geological maps. London, 1878.
- Heim, Albert: *Untersuchungen über den Mechanismus der Gebirgsbildung im Anschluss an die geologische Monographie der Tödi-Windgällen Gruppe*. 2. Theile. Mit einem Atlas von 17 Karten und Tafeln. Basel, Schwabe.
- *Ueber die Verwitterung im Gebirge*. Schweighauser, Basel, 1879. Mit 17 Abbildungen. (Oeffentliche Vorträge gehalten in der Schweiz, v. 5.)
- Hinterhuber, Rudolf: *Flora des Schafbergs bei S. Wolfgang*. (Separatabdruck aus dem Jahresbericht des Linzer Museums. 26. Band.)
- Hochenegg, F.: *Rundreise-Führer auf der Kaiserin Elisabeth-, Erzherzogin Gisela-, Kronprinz Rudolf-, Salzkammergut- und Südbahn, mit Rücksichtnahme auf die Anschlüsse ins Ausland. Nach eigener Anschauung und den besten Quellen*. 3. Ausgabe. Mit Rundreise-Karte, Vorschlägen zur Zeiteinteilung und Wiener Fremdenführer. Teschen, Prochaska.
- Höfer, H. Prof.: *Gletscher- u. Eiszeitstudien*. Wien, Gerolds Sohn, 1879.
- Höfler, Hofrath Dr. Max.: *Führer von Tölz und Umgebung, Tegernsee, Schliersee, Kochel-, Walchen-, und Achen-See, sowie das angrenzende Gebirge*. 3. Auflage. Finsterlin, München.
- Höhen Verhältnisse der Bad- und Luftcurorte und der Posttrouten in Graubünden*. Chur, Hitz, 1878.
- Hoisel, J.: *Cilli und dessen Sunnbäder*. Braumüller, Vienna.
- Huxley, T. H.: *Physiography; an Introduction to the Study of Nature*. Macmillan. London, 1877.
- Inauguration à Chamonix du Monument élevé à la Mémoire de Jacques Balmet en 1878*.
- Ischl und seine Umgebungen, unter gleichzeitiger Berücksichtigung Gmundens, sowie des gesammten Salzkammergutes*. 3. Auflage. Mänhardt, Gmunden, 1878.
- Janisch, J. A.: *Topographisch-Statistisches Lexikon von Steiermark, mit historischen Notizen u. Anmerkungen*. Heft xvi.-xx. Graz, 1878.
- Jeanbernat, Dr. E.: *Massif du Laurenti*. 1879. (See also Filhol, E.)
- Joanne, Adolphe: *Géographies Départementales à un franc*. Hachette, Paris.

Hautes Alpes, Drôme, Isère, Basses Alpes, Alpes Maritimes Savoie, Haute Savoie.

Jouglar, Dr.: *Le Capcir et le Donnèzan*. Paris, Savy, 1880.

Kaden, Woldemar: *Sritzerland: its Mountains and Valleys described. With 418 Illustrations*. London.

Kaltbrunner, D.: *Manuel du Voyageur. Avec 280 figures et 24 planches*. Würster & Co. Zürich, 1878.

Kell, R.: *Die Berger-Alpe, eine pflanzengeographische Skizze*. (Programm der Annenschule in Dresden.)

Kelterborn, R.: *Beitrag zur Geschichte der Schweizer-Karten, mit 3 Kärtchen*. Basel. Druck von Wittmar, 1878.

Koch, Dr. D. W.: *Taschenbuch der Deutschen und Schweizer Flora. Nach der Originalangabe gänzlich umgearbeitet von Ernst Hallier*. Fues, Leipzig, 1878.

Koch von Berneck, M.: *In 30 Tagen durch die Schweiz*. 2^e Auflage. Mit Karte der Schweiz. Würster & Co., Zürich, 1878.

Kräutersammler, der Schweizer. Ausführliche Beschreibung aller in der Schweiz wild wachsenden Pflanzen und Kräuter. Neu Ulm, Stahl, 1879.

Kuhn, F. V.: *Der Gebirgskrieg*. 2^e Auflage. Seidel u. Sohn, Vienna.

La Mara: *Im Hochgebirge. Skizzen aus Oberbayern und Tyrol*. 2^e Ausgabe. Schmidt und Günther, Leipzig, 1878.

Lechleitner, Prof. Christian: *Ueber den rothen Sandstein an der Grenze der Centralen und Nördlichen Kalkalpin*. (Programm des K. K. Staatsgymnasiums in Innsbruck, 1878.)

Lepsius, Dr. Richard: *Das Westliche Süd-Tirol geologisch dargestellt*. Mit einer geologischen Karte, 12 Holzschnitten im Text, zahlreichen Profilen und 7 Tafeln mit Abbildungen. Hertz, Berlin, 1878.

Lidl, M.: *Wanderungen durch die Starburger- und Ammersee-region*. 2^e Auflage. Landsberg, Verza.

Liégeard, S.: *Une Visite aux Monts Maudits*.

————— *20 jours d'un touriste au pays de Luchon*.

Lory, Charles: *Profils géologiques de quelques massifs primitifs des Alpes*. (Extrait des Comptes-rendus des séances de l'Académie des Sciences. Séance du 22 Avril, 1878.)

Löwe, Ferd.: *Aus dem Zillerthaler Hochgebirge*. Amthor, Gera.

Ludwig, J. M.: *Pontresina and its Neighbourhood*. Stanfords, 1879.

Lukmanier, der, nebst dem Gotthard. *Beiträge zur Gotthardsfrage. Von einem deutschen Ingenieur*. Stuttgart, Metzler.

Magnin, Benoît Nicolas. (See Publications of 'Club Alpin Français'.)

Malfatti, Bartolomeo: *Degli Idiomi parlati anticamente nel Trentino e dei dialetti odierni. Note storiche*. Lüscher, Roma.

Marinelli, G.: *Le prime Alpinisti sulla vetta del Monte Canino*.

————— *Materiali per l'altimetria Italiana. Regione Veneto-orientale. Raccolta di 222 Quote d'Altezza rilevate mediante il Barometro nei Bacini del Tagliamento, dell'Isongo, del Liverza, del Piave, e del Gent. Con un Introduzione di G. Cora*. Serie II. Turin, 1878.

————— *Sull' altezza del Monte Antelao*. (From 'Memorie della Società Geografica,' 1878.)

Meyer's *Reisebücher*. Deutsche Alpen. Oestlicher Theil. Salzburg, Berchtesgaden, Hohe Tauern, Pusterthal und Dolomiten, Salzkammergut, Ober- und Nieder-Oesterreich, Steiermark, Kärnten, Krain. Leipzig, 1878.

Michaelis, C.: *Das rationale Reisen und die Gebirgsluft als Heilmittel, mit besonderer Berücksichtigung von Partenkirchen und Umgegend*. Meinhold u. Söhne, Dresden.

Michel, J. A.: *Reiseschilderungen und naturgeschichtliche Aufzeichnungen*. Mit Bildniss des Hingeschiedenen und Ansicht des Pavillon der Glacier de l'Aar. Stuber, Mühlhausen, 1879.

Modoni, A.: *Il Faucigny. Ricordi Alpini*. Bologna, 1878.

————— *Sul Titano. Note d'un Alpinista*. Imola, 1879.

Mojsaisovics v. Mojsvár, Edm.: *Die Dolomit-Riffe von Südtirol und Venc-*

ten. *Beiträge zur Bildungsgeschichte der Alpen*. Mit einer geologischen Karte in $\frac{1}{7,5000}$ in 6 Blättern und 30 Lichtdruckbildern, sowie zahlreichen Holzschnitten im Texte. 6 Hefte. Hölder, Vienna, 1878.

Moosengel, A.: *Schweizer Landschaften. Skizzen nach der Natur aufgenommen*. Chromographische Reproduktion. Von Gust. W. Seitz. Seitz, Hamburg.

Mörle, H.: *Von Partenkirchen über Nussereit nach Imst*. Nebst Karte. Reisewitz, Gera, 1879.

Murray's *Handbook for Travellers in Switzerland, the Alps of Savoy and Piedmont, the Italian Lakes, and part of Dauphiné*. With travelling maps, plans of towns, &c. 16th edition revised. In two Parts. London: Murray, 1879.

Niox, G.: *Les Routes militaires des grandes Alpes et la frontière Austro-Italienne. Esquisse de Géographie militaire*. Paris: Dumaine, 1878.

Noß, Heinrich: *Deutsches Alpenbuch: die deutschen Hochlande in Wort und Bild*. Lieferungen 23-26. 1878.

————— 2. Bd.: *Tirol und das Salzburgische Hochgebirge*. Lieferungen 11-14. (Schluss.) Glogau, Flemming. 1878.

Oehlmann, Ernst: *Die Alpenpässe im Mittelalter*. [In Jahrbuch für Schweizerische Geschichte, iii. (1878), and iv. (1879). Höhr, Zürich.]

Osenbruggen, Ed.: *Les Alpes et les glaciers de la Suisse*. 60 vues pittoresques. Bâle, 1878.

Par, Franco: *Nel Cudore e Friuli italiano*. Bologna, 1877.

Payot, Venance: *Oscillations des quatre grands glaciers de la vallée de Chamounix, et énumération des ascensionnistes*. Geneva, Sandoz, 1879.

Pernisch, J.: *Das Oberengadin*. Mit 21 Illustrationen. (Also in English.) Zürich: Orell, Füssli & Co.

Pfeiffer: *Légende territoriale de la France, pour servir à la lecture des cartes topographiques*. 2^{me} édition, entièrement refondue, avec figures intercalées dans le texte, et 18 planches tirées en lithographie et en chromolithographie. Ch. Delagrave. Paris, 1877.

Plaut, Fridolin: *Neuer Führer durch Meran und dessen Umgebung*. Mit einem medicinischen Beitrage von Dr. R. Hausmann. Mit Karte von Meran und Umgebung von Dr. E. v. Hartwig, und Plan von Meran, Ober- und Untermais. 2^{te} Auflage. Meran, Plaut, 1878.

Plattner, Plac.: *Geschichte des Bergbaus der östlichen Schweiz*. Chur, Kellenberger, 1878.

Proell, G.: *Gastein, its Springs and Climate*. 3rd edition. Salzburg: Glonner.

Queyrat, J. (See Publications of 'Club Alpin Français'.)

Rabel, J., & G. Gröger: *Touristenführer im Oesterreichischen Alpenlande*. Hernalz, Vienna, 1879.

Radlke, Dr. G.: *Die Chersuren und ihr Land untersucht im Sommer 1876*. Fischer, Cassel, 1878. (Cf. No. 7 of Band 24 of Petermann's *Mittheilungen*.)

Raffaelli, B.: *Descrizione geografica, storica, economica della Garfagnana*. Lucca, 1879.

Rosebegleiter, kurzgefasst und praktischer, auf der Rundfahrt durch Oberösterreich, das Salzkammergut und Salzburger Gebirgsland, auf der Kronprinz Rudolf-, Gisel- und Elisabeth-West Bahn. Mit Karte. Salzburg: Glonner, 1878.

Rochas, Albert de: *Premiers essais d'un glossaire topographique des Alpes*. (In 'Revue de Géographie,' April, June, etc., 1879. Paris.) (See also Chabrand, Mlle.)

Robracher, Jos. A.: *Das Ampezzothal. Handbüchlein für Touristen*. Mit 3 Ansichten in Lichtdruck. Innsbruck, Wagner.

————— *Das Iselthal und seine Nebenthäler, Wändisch-, Matrei, Grossvenediger. Touristische Schilderungen*. Innsbruck, Wagner.

Rossi, J.: *Schio-Alpina, Saggio di Guida alle vallate del Léogra, del Timonchio, dell' Astico, del Posina*. In appendice: I Sette Comuni Vicentini, la valle dell' Agno (Recoaro) o Passi nel Tirolo. Schio, Marin e Comp., 1878.

Schaub, Ch., et M. Briquet: *Guide pratique de l'ascensionniste sur les montagnes qui environnent le Lac de Genève*. 2^{me} édition. Genève, 1879.

Schrader, F.: *Eudes géographiques et Excursions dans le massif du Mon Perdu*.

Schneller, Christ.: *Anton Falger und das Lechthal*. Innsbruck, Wagner. (Reprinted from 'Zeitschrift des Ferdinandeums'.)

Schweiz, die. Illustriertes Handbuch für Reisenden. 9^{te} Auflage. Mit Karten und Plänen. Berlin, Goldschmidt, 1878.

Seboth, Jos.: *Die Alpenpflanzen nach der Natur gemalt*. Text von F. Graf. Nebst einer Anleitung zur Kultur der Alpenpflanzen in der Ebene, von J. Petrasch. Heft 1-6. Prag, Tempsky. (See English translation under Bennett, A. W.)

Sonklar, Carl von. (See Publications of D. u. Oesterr. Alpenverein.)

Steiner, L.: *Glarnischfahrt*. Zürich, 1879.

Switzerland and the Swiss. Sketches of the Country and its Famous Men. By Author of *Knights of the Frozen Sea*. With 24 Illustrations. London, 1877.

Tansini, A.: *Excursioni Invernali. Cinque Giorni per Monti*. 1878. (Reprint from 'Fanfulla' of Lodi.)

Tigri, G.: *Guida della Montagna Pistoiese*. 3rd edition. Pistoia, Niccolai, 1878.

Tissot: *Mouvements des montagnes*. Annecy, 1877.

Trautwein, Th.: *Südbaiern, Tirol, Salzburg u. die angrenzenden Theile von Oberösterreich, Steiermark, Kärnten und Oberitalien. Wegweiser für Reisende*. Mit Uebersichtskarte u. 12 Spezialkärtchen. 6^{te} vermehrte Auflage. 1878. Lindauer München.

Troger, Prof.: *Hannibal's Zug über die Alpen*. Mit Karte. (Programm des K. K. Ober-Gymnasiums zu Innsbruck).

Tschudi, Iwan von: *Der Tourist in Schweiz*. 20^{te} und 21^{te} Auflagen. 1878, 1879. S. Gallen.

_____. *Praktische Reiseregeln und Notizen für Touristen in der Schweiz*. 4^{te} Auflage. S. Gallen, 1878.

Vaccarone, L., e Nigra, L.: *Guida itinerario per le valli dell'Orco, di Soana e di Chiussella*. Con una carta corografica. Casanova, Turin, 1878.

Vallentin, Fl.: *Excursions archéologiques dans les Alpes du Dauphiné*.

Vaterland, Unser, in Wort und Bild. Geschildert von einem Verein der bedeutendsten Schriftsteller und Künstler Deutschlands und Oesterreichs. I. Die Deutschen Alpen. Wanderungen durch Tirol und Vorarlberg, das baierische Gebirge, Salzkammergut, Steiermark und Kärnten. Mit Illustrationen und Holzschnitten (24 Lieferungen, Tirol u. Vorarlberg complet). Stuttgart, Gebr. Kröner, 1878.

Vézian, Alex.: *Etudes géologiques sur le Jura*.

Viollet-le-Duc: *Mont Blanc*. Translated by Benjamin Bucknall. London.

Vorarlberg. Von G. L. Schindler: *Notizen für Touristen*. 4^{te} Auflage. Brezgenz, Teutsch.

Waldheim: *Führer auf den Oesterreichischen Alpenbahnen*. Redigirt von H. Jacobsen. Waldheim, Vienna, 1878.

Waltenberger, A.: *Stubai, Oetzthaler und Ortlergruppe, nebst den angrenzenden Gebieten. Mit besonderer Berücksichtigung der Bronnerbahn, der Gegend von Meran und Bozen (Specialführer durch die Deutschen u. Oesterreichischen Alpen. II. Theil)*. Mit einer Uebersichtskarte. Augsburg, Lampart & Cie.

Weber, J. C.: *Die Alpenpflanzen Deutschlands und der Schweiz in 400 nach der Natur colorirten Abbildungen in natürlicher Grösse*. 4^{te} Auflage. Systematisch geordnet mit Text von Dr. C. A. Kranz. Lieferungen 1-25. München, Kaiser.

Wegweiser, praktischer, durch die Schweiz. Nach der 9^{te} Auflage des grösseren Reisehandbuches (Die Schweiz). Mit Karten. Berlin, Goldschmidt.

Whymper, Edward: *The Ascent of the Matterhorn*. With Notes and Illustrations. London, Murray, 1880.

Zähler, Julius: *Edelmütha: die Schöpfung des Edelweiss. Eine Alpenerzählung*. In 7 Gesängen. Dresden, Meinhold u. Söhne.

III. Maps and Diagrams.

Abstände und Elevationswinkel der bedeutendsten Berggipfel über bekannte Aussichtspunkte. Von W. Biermann. (Zeitsch. des D. u. Oest. Alpenvereins. 1879).

Alpenkarte von Chr. Michel, in 18 Sectionen. München, Finsterlin. 1:400,000.

Artaria: Touristen Karten, gezeichnet u. gravirt v. Maschek. Blatt 6: Zell am See, Gastein, Gross-Glockner. 1: 129,000. Blatt 6a.: Innsbruck, Achensee, Zillertal, Venediger. Blatt 10: Dolomite von Süd-Tirol, Bruneck. Bozen, Ampezzo.

Atlas, Topographischer, der Schweiz. 1:50,000. Lief. 10, 11, 12, 13, 15. Bern.

Buquosa. Massif de, Par E. Wallon. (Annuaire du Club Alpin Français, 1878).

Clermont Ferrand, Carte de, et de ses Environs. 1:60,000. (C. A. F. Section d'Auvergne.)

Etna, Carta topografica dell', 1:100,000. (Bollettino del Club Alpino Italiano, 1879).

Excursionskarte des Schweizer Alpenclub für 1876-7. 1:50,000. Blätter. Tödi, Linththal, Elm, und Laax, (Jahrbuch des S. A. C., 1877-8. Beilage.)

Frontière des Alpes, Carte de la, 1:80,000. Puget Théniers, Antibes, Cannes, Demonte, Fréjus, Grasse, Mont Viso, S. Etienne, S. Sauveur, Sospel, Taggia, Tende, Vintimille.

Gottsches, Ethnographische Karte der Deutschen Sprachinsel, (Zeitschrift d. D. u. Ö. Alpenvereins, 1878.)

Hallkalkette, die westliche, orig. Aufnahme des k. k. Milit. geogr. Anstalt. 1:25,000. (Zeitschrift des D. u. Ö. Alpenvereins, 1879.)

Hochfeiler und Hochferner. Kammerverlaufskizze. Von Seyerlen. (Zeitsch. des D. u. Ö. Alpenvereins, 1879.)

Hohen Tatra, Karte der, mit den nächsten Voralpen. 1:100,000. (Jahrbuch des Ungarisch. Karpathen-Vereins, 1877.)

Kaisergebirge, Karte von. 1:50,000. Nomenolatur von Th. Trautwein. (Zeitsch. des D. u. Ö. Alpenvereins, 1879.)

Küstenländer von Oesterreich Ungarn und den angrenzenden Gebieten von Krain, Steiermark, und Kroatien nach den Aufnahmen der k. k. Geolog. Reichsanstalt, sowie neueren eigenen Beobachtungen entworfen von Dr. Guido Stache. Wien, Hülder.

Mandron- und Lobbia- Gletscher, der, im Jahre 1820 und im Jahre 1878, von Südo. 1:25,000. (Zeitsch. des D. u. Ö. Alpenvereins, 1879.)

Maritime Alps, Map of a Part of. (*Alpine Journal*, ix.)

Meije et de la Grande Ruine, Esquisse orographique d'une carte des massifs de la. Par H. Duhamel. (*Alpine Journal*, ix.)

Mont Pelvaux, Carte topographique du massif du. Reduction à l'échelle de 1:80,000 de la Carte du Pelvaux. Avec additions et corrections par Paul Guillemin. Lyons, 1879.

Monte Rosa, Schizzo topografico della parte meridionale della catena del, 1:50,000. (Bollettino del C. A. I., No. 34.)

Monts Maudits, Esquisse topographiques des, Par Comte H. Russell. (Annuaire du C. A. F., 1877.)

Mont Poupet, Carte géologique du, 1:200,000. (Annuaire du C. A. F., 1877.)
Oberösterreich u. Sulzburgh, Wand-Karte von. Von Kozenn u. Baur. 6 Blätt. Wien, Hölzel.

Olperer, die Gruppe des, (Zeitsch. des D. u. Ö. Alpenvereins, 1878.)

Ostalpen, Specialkarte der. 1:50,000. Section Feuerstein. Section Habicht. (Zeitschrift des D. u. Ö. Alpenvereins, 1878.)

Oesterr.-ungarischen Monarchie, Specialkarte von. Zone 18. Col. 9. Gmund u. Spital. Vienna.

Pyrénées espagnoles, Carte de la région dominée par le Mont Perdu, avec une partie des Hautes Pyrénées Françaises. Par F. Schruder. (Annuaire du C. A. F., 1877.)

Pyrénées espagnoles de l'Aragon, Région méridionale des, Vallée de l'Aurin et de la Theña. Par E. Wallon. 1: 200,000. (Annuaire du C. A. F., 1878.)—*Région comprise entre le Rio Ara et le Rio Aragon.* Par E. Wallon. 1: 232,000. (Annuaire du C. A. F., 1877.)

Reussgebiete, Karte der Terrassen und Thalstufen des, 1: 100,000.

Profiltafel zur Erosion des, (Both by A. Heim in Beilagen to S. A. C. Jahrbuch, 1878-9).

Rondinaio e Pizzo Regina, Carta del Gruppo del, 1: 100,000. (Bollettino del C. A. I., 1879.)

Sannthaler-Alpen, Karte des centralen Theiles der, (Jahrbuch des Oesterr. Touristen Club in Wien, 1876).

Salzkammergut, Salzburg u. Berchtesgaden. Von Messerer u. Minsinger. 1: 500,000. Regensburg, Coppenrath.

Schweiz, Physikalische Karte der, Von R. Leuzinger. 1: 800,000. Bern, Dalp.

Scopitzkamm in Stubai. N. O. Theil. Nach einer Skizze. Von C. Gsallen. 1: 56,250. (Zeitschrift des D. u. O. Alpenvereins, 1879.)

Südbayern, Karte von. 1: 600,000. Von Chr. Michel. München. Finsterlin.

Südwest-Oesterreich, Special Karte von 1: 20,000. Von Julius Albach. Umgebung von Wien. Umgebung von Linz. Umgebung von S. Pölten. 1878-9. (To be completed in 24 sheets.)

Todten-Gebirges, Karte des, 1: 75,000. (Jahrbuch des Oesterr. Touristen-Club in Wien, 1877.)

Tölz, Tegernsee &c. Von J. Heyberger. München, Finsterlin.

Tyrol, Karte von. 1: 600,000. Von Chr. Michel. München, Finsterlin.

Val Formazza, The Mountains of. ('Alpine Journal,' vol. ix.)

Visaurin, Mussif de. Par L. Lourde-Rocheblave et F. Schrader. (Annuaire du C. A. F., 1878.)

Wäber, A.: *Sprachkarte der Alpen.* (Jahrbuch des S. A. C., 1878-9.)

Westlichen Süd-Tirol, Geologische Karte des, 1: 144,000. Von J. R. Lepsius. Berlin, 1875-6.

West-Oesterreich, Specialkarte von, von J. Albach. 1: 200,000. Blätt. 3, 4. Vienna.

White Mountains of New Hampshire. (Appalachia, 1877.)

Wollbachspitze, Kammverlaufskizze von, R. Seyerlen. 1: 75,000. (Zeitschrift des D. u. Ö. Alpenvereins, 1879.)

Zillerthaler-Hauptkamms, Schematische Skizze, und der Richtung des warmen Luftstroms vor der Katastrophe am 16-17. August, 1878. Von J. Daimer. 1: 225,000. (Zeitschrift des D. u. Ö. Alpenvereins.)

'RASSEGNA DEL ALPINISMO.'—Under this title the Marchese F. Carega di Muricce issues at Florence a new Alpine fortnightly magazine. The form and type are excellent, and the first numbers are well edited and full of interesting matter. The subscription is 6 francs. The editor's address is Picerno (Basilicata), a town on the new line from Naples to the Gulf of Taranto, and we may hope, therefore, for interesting information on the unknown mountains of the Basilicata and Calabria.

PROCEEDINGS OF THE ALPINE CLUB.

February 3, 1880. Mr. C. E. MATHEWS, *President, in the Chair.*

Messrs. T. T. Compton, W. Collier, R. Hughes, R. Lord, junr., H. G. Willink, W. Cecil Slingsby, G. E. Maude, H. W. T. Bowyear, F. E. Wilson, and Claude Wilson were elected Members of the Club.

The accounts for the year 1879 were presented by the Hon. Secretary and passed.

Mr. W. PENHALL read a paper on 'An Ascent of the Matterhorn from the Tiefenmatten Glacier.'

Mr. A. F. Mummery, a guest of the Club, read some remarks on the first ascent of this mountain from the same side, by the Zmutt ridge, made by him last year.

Mr. J. Baumann expressed an opinion, founded on his experience of Mr. Mummery's route, that it would be frequently adopted.

A collection of drawings by Mr. GEORGE BARNARD was on view at the meeting, one of which, a fine view of the Aiguille Verte and Aiguille du Dru, has been presented to the Club by the artist.

March 2, Mr. C. E. MATHEWS, *President, in the Chair.*

Dr. Paul Güssfeldt and Mr. M. Carteighe were elected Members of the Club.

The PRESIDENT announced Mr. Douglas Freshfield's intention of resigning the editorship of the 'Alpine Journal,' on the completion of the present volume, and stated that, at the request of the Committee, Mr. W. A. B. Coolidge, Fellow of Magdalen College, Oxford, had accepted the post.*

Mr. WILLIAM SIMPSON exhibited a series of sketches of the 'Mountain Ranges round Jellalabad,' with other drawings of antiquarian interest, and made some descriptive remarks on them.

A collection of water-colour drawings by Mr. ARTHUR CROFT was on view at the meeting.

April 6th. Mr. R. C. Nichols *in the chair.*

Mr. Henry C. Warren was elected a Member of the Club.

Mr. E. T. COLEMAN read a paper entitled 'A Plea for the Alpenstock,' and exhibited various forms of ice-axes and a novel form of Alpenstock.

The CHAIRMAN showed some specimen-sheets of the Alpine Club Map of Switzerland enlarged, of remarkable clearness and good definition.

It should have been stated in the last number that M. Loppé had recently presented *two* pictures to the Club. The third new picture by M. Loppé now in the Club-rooms is the gift of the Honorary Secretary, Mr. C. T. Dent.

POSTSCRIPT.—Mr. E. Whymper writes from Quito on March 18 to Mr. F. F. Tuckett:—'I have ascended, besides Chimborazo, Corazon, Sincholagna, and Antisana. Antisana is the most difficult of these, and few more difficult ascents have ever been made. We have also passed 26 consecutive hours on the top of Cotopaxi. I am not aware that anyone has before encamped at so great an altitude—19,500 feet. . . . We have grown out of being affected by the rarefaction of the air, and can be quite gay and lively at 19,000 feet. At first we all suffered severely from it.'

* Mr. D. Freshfield has undertaken to see through the press the August Number, notices for which should be sent to him as usual.

INDEX.

- ABR**
- A** **BRIÈS**, 497
 Abruzzi, 491
 Acqui, 261, 287
 Agay, 142
 Aiguilles d'Arve, 95-96
 Aiguille de Chambeyron, 349
 Aiguille de la Grande Sassièrre,
 101, 102, 482
 Aiguille de la Za, 106, 170
 Aiguille de l'Épaisseur, 92
 Aiguille de Pécellet, 103
 Aiguille de Peuteret, 1
 Aiguille de Polset, 102, 176
 Aiguille de Talèfre, 364
 Aiguille du Charbonnet, 364
 Aiguille du Dru, 104, 185-200,
 364, 381
 Aiguille du Midi, 20
 Aiguille du Midi de Pelsay, 98, 169
 Aiguille du Plat, 361
 Aiguille du Soreiller, 91, 230
 Aiguille Grise, hut on, 236
 Albaron, 100, 474, 475
 Allaleinhorn, 29, 111
 Allos, 500
 Almagell, 284
 Alpbahelhorn, 111, 367
 Alpine Accidents, 162; in 1878,
 114-119; in 1879, 371; in 1880,
 493
 Alpine Art, 38, 78-86
 Alpine Bibliography, 503
 Alpine Climbing, 65-72
 Alpine Club, Austrian, 240
 Alpine Club, Beginnings of the,
 50; Honorary Members of, 448;
 Proceedings of the, 181, 240,
 312, 448, 512
 Alpine Clubs, Congress of, 154-
 156, 333
 Alpine Club, German, 180, 444
 Alpine Club, Swiss, 178, 443
 Alpine Guide, 386
 Alpine Huts, 166, 490
 Alpine Meetings, 51, 239; in the
 Lakes, 440; in Wales, 177, 384
 Alpine Periodicals, 180, 436, 512
 Alpine Photography, 239, 448
 Alpine Pictures, 302, 513
 Alpine Plants, 441
 Alps in October, 399
 Alps in Winter, 398, 491
 Ambleside, 56
 Andermatten, 63
 Anodes, 384, 489, 513
 Annuaire du Club Alpin Français,
 442
 Antablia Glacier Pass, 369
 Antibes, 139
 Aralyk, 318
 Ararat, 54, 313-327
 Aria de Monti, 445
 Aspromonte, 387
- BAL**
- B** **DALFERINHORN**, 110
 Balmenhorn, 310
 Barcelonnette, 336, 468
 Basoline, 60, 112, 171
 Bassa de Druos, 358
 Baths of Valdieri, 400, 404
 Bec de Blancien, 365
 Bernese Oberland, 111, 368, 438,
 484-9
 Bernina Group, 173, 443, 492
 Biella, 181
 Bietschhorn, 111
 Bignasco, 61
 Bingöl Dagh, 183
 Blinnenhorn, 68
 Blimenthal, 58
 Blumlisalphorn, 439
 Bonneval, 475
 Bordier on Glaciers, 327-333
 Bordighera, 151
 Bosco, 62
 Bourrit, Mons., 11
 Bousson, Pointe du, 480
 Brantschen, J., Death of, 373-381,
 438
 Brec de Chambeyron, 351
 Buet, the History of, 6-27
- C** **CAMPIGLIO**, 306
 Cannes, 138, 385
 Cap Roux, 141
 Carnie Alps, 446
 Castel Delfino, 498
 Caucasian Glaciers, 392
 Caucasian Literature, 182
 Caucasus, Views of, 304
 Cerentino, 62
 Ceresole, 478
 Certiana, 153
 Certosa di Peggio, 409
 Chailloil Cône, 358
 Chamonix Règlement, 308
 Cheiron, 147, 150
 Cheyenne, 242
 Chimborazo, 489
 Ciarnarella, 99, 474
 Cima dei Gelas, 341, 410
 Cima della Calatta, 90
 Cima della Rovina, 391-2
 Cima di Canali, 371
 Cima di Mercantoura, 391, 409
 Cima di Nasta, 89, 406
 Cime de Chabournean, 360
 Cime du Vallon, 231
 Cogne, 54; Gleanings from, 72-77
 Col Agnel, 352
 Col de Bassac Deré, 101
 Col de Blancien, 365
 Col de Castelnaud, 362
 Col de Cerri, 100, 480
 Col de Chalance, 91, 231
 Col de Claire, 362
 Col de Cornella, 104
- COL**
- Col de Daunv Blantz, 107, 170
 Col de Fos, 101, 482
 Col de Gébroulaz, 102, 103, 176
 Col de Girard, 477
 Col de la Cayolle, 336
 Col de la Chambre, 104
 Col de la Ciarnarella, 474
 Col de la Côte Rouge, 94
 Col de la Dent Blanche, 173
 Col de la Gailletta, 101, 483
 Col de la Galèse, 480-1
 Col de la Gandolère, 362
 Col de la Gipplern, 352
 Col de la Lavay, 94, 355
 Col de la Lésaze, 99
 Col de la Montée du Fond, 103
 Col de la Muande, 91
 Col de la Vaurze, 361
 Col de Larosor, 99
 Col de l'Arpont, 104
 Col de l'Étret, 362
 Col de l'Herbetet, 77
 Col de l'Homme, 93
 Col della Barma d'Oropa, 181
 Col della Piccola, 478
 Col de Miage, 26
 Col de Montandayné, 77
 Col de Pécellet, 104
 Col de Pierre Fendue, 92
 Col de Polset, 176
 Col de Séa, 93, 474
 Col de Segoret Foran, 94
 Col de Valante, 353
 Col de Valasco, 338
 Col de Vault, 482
 Col des Berelles, 361
 Col des Corridors de la Meije, 362
 Col des Navettes, 358, 361
 Col des Ronsses, 365
 Col des Sellettes, 231
 Col di Teleccio, 76
 Col di Tenda, 346, 498
 Col d'Olan, 231
 Col Dolent, 236
 Col du Bouchet, 103
 Col du Géant, 22, 86-89, 236
 Col du Grand Appareil, 100, 481
 Col du Grand Cornier, 172
 Col du Grand Méan, 100, 475
 Col du Grand Tetrét, 76
 Col du Loup, 359
 Col du Palet, 484
 Col Durand, 172
 Col du Sny, 362
 Col du Sélé, 229
 Col du Tour, 26
 Col du Vallon Laugier, 316
 Colle della Bicoeca, 346
 Colle della Madonna, 346
 Colle dell'Ortiga, 346
 Colle del Sabbione, 346
 Collo di Sibolet, 346
 Col Tomini, 474

COL

Col Tuckett, 359
 Col Vieux, 359
 Cotopaxi, 45, 490
 Cottian Alps, 346-354, 446; Inns
 in, 497
 Coursegonies, 152
 Crête de la Bérarde, 91, 229
 Crête du Glacier Blanc, 359
 Criner Furka Pass, 63
 Cuneo, 400
 Cylene, 180

DACHSTEIN Group, 495
 Dauphiné, 121, 175, 296, 442
 Dauphiné District, 90-97, 354-362
 Dauphiné, Mountaineering in,
 without guides, 219-233
 Davos, 493
 Demonte, 346, 498
 Dent d'Hérens, 49, 382
 Dent du Géant, 48
 Dent du Midi, 27
 Dent Parrachée, 104
 De Saussure, 24, 143
 Devdarak Glacier, 183
 Diablerets, Accident on, 373
 Dirphe, 157
 Dolomites, 114, 307; in Winter, 382
 Dom, 110
 Dom Joch, 200, 309
 Duranus, 389

ECRINS, Pic des, 227
 Elbruz, 138
 Embrun, 257
 Ende der Welt Ferner, 370
 English Lakes, 58, 440
 Entracques, 402
 Entre deux Eaux, 238
 Erosion in the Reuss Basin, 448
 Errata, 384, 496
 Escresins, 407
 Estang, 500
 Esterales, 140-146
 Eversck, 467

FÉE, 205
 Ferden Rothhorn, 485
 Finsteraarhorn, 493
 Fletschhorn, 367
 Fontainebleau, Fête at, 154-156
 Fornet, 481
 Forno, 477
 Fraxinetum, 254, 275
 Fremont's Peak, 245
 Frull, 163
 Furggenhorn, 214

GABELHORN, 107, 170
 Geneva, 327; Congress at, 333
 Gepatsch House, 32
 Geyser Basin, 232
 Gigeien, 59
 Glacier d'Argentière, Inns near,
 496
 Glacier de Fos, 101, 482
 Glacier d'Orny, 236
 Glaciers and Meteorology, 297, 301,
 435
 Glaciers, Exercising the, 495;
 Legal Rights to, 49; Measure-
 ment of, 333, 431
 Gosset, Mr., Survey by, 431, 500
 Granian Alps, 51, 99-102, 362-363,
 474-484
 Grand Appareil, 100, 481
 Grand Bec, 176

GRA

Grand Combin, 28, 106
 Grand Cornier, 106, 289
 Grand Paradis, 5, 52, 363, 479
 Grand Pic de la Meije, 93, 121-136,
 293-297, 411-427
 Grand Rubren, 348
 Grand Teton, 253
 Grande Moucherolle, 176
 Grande Ruine, 293, 295
 Grande Serre, 363
 Gran Sasso d'Italia, in winter, 491
 Grasse, 148
 Greece, Excursions in, 157-161
 Griesgletscherjoch, 58
 Gries Pass, 496
 Griesthal, 59
 Grindelwald, 214, 282, 485
 Grivola, 72, 74
 Gross Glockner, 238
 Grosventre Mountains, 248
 Guiana, British, 501-3
 Guide-books, 311; Pocket, 181
 Guides, 70; Insurance for, 49
 Guides' Fund, 445
 Guides' Stories, 436
 Gullestre, 497

HALYS, 464
 Himalayas, 304, 384
 Hohsandshorn, 64
 Hoch Wilkspitze, 494
 Honorary Members of Alpine
 Club, 418
 Hungarians, 264
 Huts, 165, 180, 224, 232, 235, 238
 Huts and Chains, Alpine, 490
 Huxley's, Professor, Physio-
 graphy, 54

ILLIMANI, Ascent of, 489
 Inukcoopers, Swiss, 485
 Inns, 49, 238
 Isola, 499

JAKOB ANDEREGG, 120
 Julia Alps, 287
 Jungfrau, 112

KAFFIRSTAN, 292
 Kaiserich, 465
 Kaiser Joch, 32
 Kasten Joch, 368
 Khaltshilton Glacier, 182
 Köllgusspitze, 167; in winter, 492

LA BÉRARDE, 133, 230, 412, 426
 Laghi delle Meraviglie, 345,
 393
 Lago Agnel, 345
 Lago della Rovina, 402
 Lago di San Giuliano, 304
 Lake of Phonia, 161
 La Madalena, 499
 Lämmerhorn, 493
 La Motte, 238
 Lanterne, 493
 Lantosen, 390
 Laquinhorn, 29
 La Val de Tignes, 238, 481
 Le Bar, 148
 Lobendun Pass, 369
 Le Borecat, 153
 Le Bois, 238
 Le Parc, 356
 Le Plarec, 356
 Lepontine Alps, 57-64, 112, 369
 Les Auberts, 361

MUR

Les Dans, 93
 Les Fonds, 4
 Les Jumeaux, 4
 Leukerbad, Ascents near, 493
 Levanua, 168, 477
 Levanon, 388
 Limpiopongu, 45
 Lineacio, 62
 Little Scheideck, 487
 Lohner, 438
 Loppé, M., pictures by, 42, 303
 Lys Joch, 181, 309
 Lyskamni, 109

MADONNA DI FINISTRE, 499
 Majella, 492
 Maljasset, 497
 Mäntlichen, 214, 486
 Map Cupboard, Alpine Club, 513
 Maps, 409
 Maritime Alps, 89, 136-154, 336-
 346, 383, 385-411; Inns in, 49
 Mürjelen Sec, 444
 Matscher Thal, 37
 Matterhorn, 365-6, 372-3, 440, 446,
 449-462
 Maurienne, origin of name, 258
 Maurienne District, 102-104
 McJie, 93, 121-136, 293, 297, 411-427
 Meiringen, 215, 234
 Merzenbachscheln, 58
 Meteorology, 297, 301, 435
 Mischabel, 278, 284
 Mitre de l'Évêque, 364
 Mittelhorn, 64
 Mittelhorn, 487
 Mönchjoch, 301
 Mont Agel, 383
 Mont Aiguille, 502
 Montagne de l'Ours, 358
 Montagne des Maures, 203, 254
 Mont Bernier, 98, 169
 Mont Blanc, 48, 105, 171, 179;
 Ode to, 446
 Mont Blanc District, 104-106, 364
 Mont Chauve, 163
 Mont Clapier, 343, 403
 Mont Delphi, 157
 Mont Lykeri, 158
 Mont Maudit, 105, 170, 313-318
 Mont Mounier, 337
 Mont Pelat, 336
 Mont Pourri, 97
 Mont Thabor, 96, 176
 Mont Thuriaz, 97
 Mont Tinibras, 337
 Mont Vclan, 27
 Mont Ventoux, 183
 Mont Vinaigre, 145
 Monte Bignone, 153
 Monte Cevadale, accident on, 114,
 162; in winter, 492
 Monte della Stela, 349, 410
 Monte Moro, 280, 282, 285
 Monte Rosa, 108, 496
 Monte Rosa District, 107-111, 365-8
 Monte Rosso di Scarscen, 179
 Monte Scerscen, 439
 Monte Tomale, 306
 Monte Viso, 138, 410; from the
 north, 353-4

Mortersack Glacier, 118, 492
 Mosley, Dr. W. O., Death of, 372
 Mount Argana, 384, 462-473
 Mount Ziria, 160
 Murajon, 499
 Mürren, 487

NAD

NADELHORN, 367
 Nadel Joch, 200
 Nauders, 31, 500
 New Expeditions, 89-114, 335-71 ;
 defined, 171
 Noasca, 76
 Nord End, 108-9
 Novalesa, 256
 Nuefelfgiu Pass, 63

OBERALPSTOCK, 369
 Oetzthaler Ferner, 31-37, 113,
 489
 Ofenjoch, 64, 171
 Onlezana, 365
 Örteler District, 370
 Örteler Spitz, 370 ; in winter, 492
 Oulx, 256, 497

PALE, 55
 Pale di San Martino, 48, 165,
 507
 Palu di Mughì, 306
 Paris, Congress at, 154
 Parnassus, 153
 Pas de la Cavale, 361
 Pas du Gros Grenier, 96
 Passo della Lourousa, 403
 Passo di Lusiera, 343
 Passo di Mont Clapier, 343
 Passo di Pagari, 343
 Passo di Vajolet, 144
 Pelvoux, 227
 Pennine Alps, 106, 364
 Petermann, Dr., death of, 129
 Petit Mont Bassac, 101-2, 483
 Petrarch, 183
 Pic Bonvoisin, 359
 Pic de la Lune, 362
 Pic des Agneaux, 359
 Pic des Arcas, 90, 225
 Pic des Oplivous, 90, 225
 Pic du Frêne, 176
 Pic du Saye, 355
 Pic du Thabor, 96
 Pic du Vallon, 91
 Pic Joceline, 90, 226 ; 357
 Pic Olan, 134, 361, 412
 Pic Verdonne, 360
 Pinzolo, 304
 Plz Bernina, 118, 162, 168 ; in
 winter, 492
 Plz Linard, 113
 Plz Palli, 119, 164
 Plz Roseg, 113, 168, 363
 Po, source of, 54
 Pointe de Bazel, 101
 Pointe de Ceresole, 362
 Pointe de Chalmson, 474
 Pointe de la Font Sancte, 347
 Pointe de la Sana, 99
 Pointe de Mary, 348
 Pointe de Sainte Anne, 348
 Pointe des Etages, 94
 Pointe du Bousson, 480
 Pointe du Mulinet, 100, 476
 Pointe Haute de Mary, 350
 Pontresina, 263, 287 ; Guide to,
 812

PRA

Prallèves, 498
 Pratt, Mr., Death of, 119
 Pranzo, 498
 Pré de Madame Carle, 91, 224
 Provençals, 387
 Punta Giordano, 4
 Pyrauce, 442
RAPPENTHAL, 64
 R Rarefied Air, Effect's of, 76,
 68, 489
 Rassegna del Alpinismo, 512
 Râteau, 92, 232
 Rockingen, 57
 Retzi Rothhorn, 494
 Rhône Glacier, 431-436, 489, 500
 Rieti Pass, 111
 Rigì, 447, 485
 Rimplas, 395
 Rinderhorn, 493
 Rioburent, 348
 Rocca dell' Argentera, 340, 410
 Rocca del Mat, 339, 411
 Roche d'Alvan, 92, 232
 Rocher de l'Encula, 363
 Rocky Mountains, 241-253, 312
 Roja, 500
 Rope, 66 ; use of, 115-6
 Roralma, 501
 Rosengarten Gebirge, 238
 Rosenlani, 40, 487
 Rossbodenhorn, 39
 Rovina, Val and Lago della, 402

SAAS, 201, 308, 278, 283
 Sainte Hélène, 101
 San Carlo, 81
 San Dalmazzo di Tenda, 409, 498
 San Martino di Lantoca, 390, 499
 San Salvatore, 396
 Saracens, 202, 208-212, 254-288
 Sassièra, 101-2, 482-3
 Sasso di Mur, 114
 Saut du Loup, 147-149
 Schebnos group, 183
 Schneeberg, accident on, 493
 Schneelhaube, 439
 Schrattefeld, 178
 Schreckhorn, 180 ; in winter, 184,
 213-19
 Seguret Foran Range, 90, 225
 Siah Koh Range, 292
 Sikaram, 288
 Silvretta Group, 113
 Sirac, 361
 Sixt, 8
 Sketching in the Alps, 78-86
 S. Martino del Var, 397
 Snow blindness, 175
 Souvenir de Zermatt, 417
 St. Césaire, 162
 St. Etienne, 500
 St. Mojons, 271-4
 St. Paul-sur-Usège, 351, 497
 Strahlleck, 486
 St. Théodule, 31
 Suche, 481
 Sulfid Koh Range, 288
 Switzerland Illustrated, 447

ZMÜ

TANNERNON, 146
 Tarontaise District, 97-99,
 175, 238
 Tashhorn, 109, 900-908
 Tête de l'Étret, 355
 Tête des Fetoules, 354
 Teton Mountains, 250
 Tiefenmatten Glacier, 336, 459 ;
 -joch, 49, 382
 Tignes, 238, 482
 Tinca Valley, 337, 396
 Töll District, 369
 Tosi Falls, 69
 Tour de St. Pierre, 75
 Trachellainnen, 487
 Trentino Annuario, 55, 445
 Trift Grätli, 202
 Triflumlml, 489
 Tschingel, the dog, death of, 310
 Tyrol, 177

ULRICHSHORN, 28

VAL BAVONA, 61
 Val Champoléon, 361
 Val Chiusella, 182
 Val d'Antabbia, 60
 Val dell' Argentera, 405
 Val de Prémou, 238
 Val de Tignes, 482
 Val di Biore, 395
 Val di Borzago, 305
 Val di Campo, 62
 Valdieri, 401, 498
 Vallauris, 139
 Vallon du Mal Infernal, 144
 Val Piantonetto, 76
 Val Savaranche, 76
 Vaudet châlète, 101-2 ; Col, 482
 Venexuela,
 Vésuvia Valley, 389
 Veteran, An Alpine, 810
 Vieach, 57
 Viecherjoch, 438
 Vioux Chaillo, 361
 Ville Vallouise, 223
 Ville Vieille, 228

WALES, Meeting in, 177
 Water-colours, Hints on
 sketching in, 78-86
 Welashorn from Zinal, 366, 427-31
 Welas Kugel, 35, 113
 Welasmites, 368 ; joch, 367
 Welas Thor in 1849, 174
 Wetterhorn, 112, 487-9
 Wildspitz, 33
 Wind River Peak, 243
 Winter ascents, 184, 213-19, 491-3
 Wyoming Range, 243

ZAHLERSHORN, 439
 Zermatt, 400 ; in 1849, 173
 Zinal Rothhorn, 108
 Zmutt Glacier, Matterhorn from,
 449-458

END OF VOL. IX.

Spottiswoode & Co., Printers, New-street Square, London.

THE MEIRINGEN FIRE FUND.



The following is a list of those subscriptions in aid of the distress at Meiringen which actually made up the fund transmitted for distribution to Sir Horace Rumbold by the Secretary of the Alpine Club, and also of the subscriptions, amounting to £67. 2s., sent out separately through the Rev. T. W. Bull, A.C., now and for some years English Chaplain at Meiringen. It should, however, be stated that after it was found that no further aid would be required, many subscriptions were returned or refused. The names of the donors of those contributions do not, consequently, appear in the published list, which only commemorates very imperfectly the assistance which was tendered to the inhabitants of Meiringen by their English friends:—

COLLECTED BY THE SECRETARY.

	£	s.	d.		£	s.	d.
Mr. and Mrs. Henry Druce	2	0	0	W. Harper	1	1	0
James Benham	2	0	0	J. B. Henly	1	1	0
Mrs. E. P. Jackson	1	1	0	Robert Ellis	1	1	0
C. R. A.	3	0	0	Rev. R. Smythe Hopkins	0	10	6
Hon. E. W. B. Portman	1	0	0	Rev. Frederick Hildyard	1	1	0
Catherine Douglas	1	0	0	Thomas Sheldon	5	0	0
Rev. C. B. Barnwell	1	0	0	Rev. R. V. Barker	1	1	0
John Walter, M.P.	10	0	0	J. B. Findlay	1	1	0
J. Conrad Schroeter	1	0	0	Mrs. Bathoe	2	0	0
E. S. Tudor	1	1	0	J. T. Warner	0	10	0
William Winter	1	1	0	Frank Warner	1	1	0
W. G. Hutchinson	5	0	0	Mrs. E. Phillips	5	0	0
H. J. Turner	2	0	0	E. M. Y.	10	0	0
J. W. Pieters	1	1	0	W. G.	3	0	0
Rev. F. Hopkinson	0	10	0	Rev. W. C. Compton	0	10	0
J. C.	0	5	0	The Misses Saltmarsh	1	0	0
J. M. Koecher	1	1	0	Rev. George Birch Reynardson	1	1	0
Mrs. T. Le Hunte Ward	1	0	0	Rev. Henry West	5	0	0
J. B. Stolterfoht	2	2	0	Mrs. Henry West	2	0	0
H. W. Prescott	2	2	0	C. D. R. S.	3	0	0
Gerald E. Maude	0	10	0	Miss Hopkins	3	0	0
Hon. Mrs. Annesley Gore	2	2	0	The Misses Dubois	1	1	0
Miss A. E. Paterson	0	10	0	Henry Langsdorff	1	1	0
Rev. J. Russell Stock	1	1	0	Edward Ridpath	1	1	0
John Dawson	5	0	0	J. H. Barker	1	1	0
Miss F. Gaselee	1	0	0	Anonymous, from 'P'	5	0	0
M. W. E.	0	5	0	John Callaway	1	1	0
Rev. Bentinck J. F. Doyle	2	2	0	Charles H. Smith	2	2	0
D. Mannering	0	10	6	Rev. Robert Barry	5	0	0
D. A. Rougemont	5	5	0	Miss Julie Hollander	0	5	0
Nathaniel Micklem	0	10	0	Rev. A. G. Waldy	1	0	0
Henry Jonas	1	0	0	Rev. E. C. Austen Leigh	5	0	0
T. T. Wheatley	1	0	0	J. Rand Capion	2	0	0
Major Ewing	1	0	0	Miss C. Wilson	1	10	0
Mr. and Mrs. Upton	2	0	0	Dr. Frederick Robinson	1	0	0
Anonymous	1	0	0	'A Genevese'	10	0	0
W. W. Fowler	5	0	0	G. H. Strutt	5	0	0
Rev. J. A. Cruikshank	1	0	0	'Seventy-six'	3	3	0
J. W. Brooke	2	2	0	Hon. Misses Plunkett	2	0	0
W. C. Clayton	1	0	0	Dr. Hermann Weber	2	2	0
Rev. P. R. Robin	3	3	0	F. M. Harman	1	1	0
Mrs. Roberts	2	0	0	D. Wotherspoon	1	1	0
Mary Stuart	10	0	0	Anonymous	1	1	0
Miss G. E. Nichols	2	2	0	E. S.	0	5	0
John Birkett	1	1	0	Dr. Owen Rees	1	0	0

	£	s.	d.		£	s.	d.
Exon	1	0	0	Miss S. A. Bridges	1	0	0
F. S. M.	2	0	0	John L. T. Graham	1	1	0
Charles Stevens	5	0	0	W. H. Branfoot	1	0	0
N. Walton	5	0	0	Rev. W. S. Wood	2	2	0
Rev. J. W. Cartmell	0	10	0	C. Stirling	2	0	0
E. S. Thompson	0	10	0	Mrs. C. Butler Stevenson	7	8	0
William Thorpe	0	10	0	Sir Henry Thompson	2	2	0
W. S. Kendall	0	10	0	General Cockburn	1	0	0
Sir John Kingston James, Bt.	1	1	0	R. Alexander Smith	2	2	0
J. A. Cooper	1	1	0	Mrs. Bellingham	0	10	0
J. H. Rumbold	2	2	0	A. de Mattos Mocatta	1	1	0
Miss Ranken	0	6	0	B. Elkin Mocatta	1	1	0
G. C. Thompson	0	10	0	Edward Provis	0	5	0
'E. V. Liverpool'	5	0	0	Miss Smith	1	1	0
Fred. Ouvry	5	0	0	R. Downs	1	1	0
Miss Spencer	0	10	0	Miss Jones (Mold)	1	0	0
The Misses Segrans	2	0	0	Mrs. Walker	1	1	0
A. Conservative	0	10	0	Miss Eccles	10	0	0
G. F. Duncombe	0	10	0	Miss M. Eccles	10	0	0
Z. Z. Z.	1	1	0	Miss Oenshaw	1	1	0
Henry Vaughan	5	0	0	R. Lord	0	10	6
Mrs. Lea	2	0	0	J. Lord	0	10	6
Sir Ughtred Kay Shuttleworth, Bt., M.P.	1	1	0	W. W. R. Powell	1	1	0
Mrs. Philip Richards	0	10	0	E. P. Jackson	1	1	0
Rev. M. F. Argles	2	0	0	T. W. Hinchliff	5	0	0
Miss Carham	0	10	0	J. H. Dart	2	2	0
Miss Simond	0	13	6	W. A. B. Coolidge	1	1	0
F. L. Fisher	0	10	6	W. J. Nixon	2	0	0
W. Brucker	1	0	0	Hon. A. D. Ryder	1	1	0
Mrs. Eardley C. Holt	2	2	0	T. W. Bonney	1	0	0
William Macgregor	5	0	0	C. T. Dent	5	0	0
Miss Cartwright	1	0	0	Francis Heilly	1	0	0
H. Tyrrell	1	1	0	Rev. T. H. Philpott	1	1	0
J. D. Hereford	3	0	0	Melville Beauchcroft	2	2	0
The Misses Pinder	0	10	0	A. W. Moore	2	0	0
Miss Deverell	1	0	0	George Clowes	1	0	0
J. B.	1	1	0	C. Haigh	5	0	0
Andrew Smith	0	5	0	R. D. Wilson	4	0	0
W. Noel Woods	0	5	0	Rev. T. W. Jex-Blake, D.D.	1	1	0
Miss Toppin	0	10	0	Gerard F. Cobb	1	1	0
Rev. C. W. Blathwayt (per Rev. J. W. Bull, A.C.)	2	2	0	Rev. A. C. Haviland	3	3	0
Per Rev. F. T. Wethered:—				D. J. Abercromby	2	0	0
lt. Hon. W. H. Smith				Thomas Brooksbank	2	0	0
M.P.	10	0	0	G. Yeld	0	10	6
John Noble	5	0	0	Rev. A. Fairbanks	1	0	0
Rev. F. T. Wethered	1	1	0	Henry Wagner	1	0	0
A Friend	1	0	0	Henry C. Norris	1	0	0
Rev. S. Wilkinson	0	10	0	Henry Pastenr	2	2	0
Rev. J. T. Brown	0	10	0	Leslie Stephen	3	3	0
M. M. W., Esq.; A. O. W., Esq.; E. E. W., Esq.; E. W., Esq.; M. P., Esq.	1	5	0	Hornce Walker	10	0	0
Smaller sums	0	10	0	Max Cullinan	0	10	0
Rev. J. J. Hornby, D.D.	10	0	0	John R. Campbell	1	0	0
			29 18 0	F. Kelly	1	1	0
D. Wotherspoon (collected)			2 0 0	L. Pilkington	2	0	0
Mrs. Tomlinson			1 0 0	James Heelis	5	0	0
W. J. Cudworth			0 10 0	C. Pilkington	1	0	0
				F. Gardiner	1	1	0
				F. Watson	1	1	0
							£419 0 6

COLLECTED BY REV. T. W. BULL, A.C.

	£	s.	d.		£	s.	d.
Rev. Thos. Williamson Bull, A.C.	5	0	9	R. D.	0	2	6
Mrs. Williamson Bull	1	0	0	W. M.	0	2	0
Miss E. G. Stewart	10	0	0	Rev. W. S. Browne	0	10	0
Miss Appleyard	0	10	0	Douglas Glyn	2	0	0
Madame Membrege	10	0	0	Rev. S. J. Crawhall	0	5	0
Rev. T. Helmore	1	0	0	E. S. B.	1	1	0
R. T. Firebrace	20	0	0	Rev. W. H. Phillot	0	10	0
R. Wilson	3	0	0	Mrs. Cameron	2	0	0
Mrs. Glassford Bell	2	0	0	M. E. G.	1	0	0
Mrs. Nugent	2	0	0	Rev. A. M. Bennett	0	10	0
Mrs. Phibbs	1	1	0	Rev. R. Hill	0	10	0
F. Thornley King	2	2	0	Rev. W. J. Sawyer	0	3	0
A Friend	0	5	6				
Miss Everard	0	10	0				£67 2 0

Princeton University Library



32101 076197258

